# Annual Report
to the
President
and the
Congress

William S. Cohen
Secretary of Defense

2000

20000301 032

# Report of the Secretary of Defense

## to the President and the Congress

2000

# TABLE OF CONTENTS

# PART IV: Transforming the Department of Defense for the 21st Century

# PART V: The FY 2001 Defense Budget and Future Years Defense Program

## PART VI: Statutory Reports

## APPENDICES

A – DoD Organizational Charts
B – Budget Tables
C – Personnel Tables
D – Force Structure Tables
E – Goldwater-Nichols Act Implementation Report
F – Personnel Readiness Factors by Race and Gender
G – National Security and the Law of the Sea Convention
H – Freedom of Navigation
I – Government Performance and Results Act
J – Information Technology Management Goals
K – Justifications for FY 2000 DoD Committees Subject to the Federal Advisory Committee Act
L – Resources Allocated to Support and Mission Activities
M – Foreign Military Assistance
N – Glossary

# Message of the Secretary of Defense

BLANK   PAGE

# MESSAGE OF THE SECRETARY OF DEFENSE

The dawn of a new century brings with it continued hope for peace and a more stable world. The reality of the last century brings us a continued awareness that the United States military must be ready to lead the way to meet even more complex challenges. Doing this requires America's armed forces to be strong and agile, ready to meet any challenge and to win. Today, we have the most precise, most lethal, most versatile, best-equipped, and best-trained forces on earth; and we have a defense program that ensures our forces will maintain their superiority in the new century.

President Clinton continues his support of a modernized military with the first real defense spending increase in over a decade, an increase that not only maintains current readiness, but prepares us to build the forces we will need in the future. This budget meets the Joint Chiefs' goal of $60 billion for modernization of major weapon systems, preserves our unparalleled technological superiority into the foreseeable future, and also supports our troops with higher pay, improved housing, and other quality of life initiatives that will help us to recruit and retain the highly qualified men and women who remain central to our military capability.

A superior military force has many elements—well-trained people, capable leadership, and advanced equipment—all of which require sustained investment over many years. It is essential that we pursue a consistent path beyond the tenure of any single administration. As I promised in my confirmation hearing, we have taken the outstanding work of my predecessors and built upon it by pursuing the strategy developed in the Quadrennial Defense Review (QDR). This strategy has enabled us to both meet today's requirements and invest in the future transformation of the armed forces. This transformation—of equipment, organization, and operational concepts—is well underway, but will be fully implemented only by those who succeed the current Administration, and the current Congress. Three years ago, I outlined my priorities for my tenure as Secretary of Defense:

- The first priority was our people in uniform and their families. U.S. military superiority requires high-quality people, which necessitates that we provide them with appropriate pay, housing, and medical benefits.
- The second priority was to maintain high levels of readiness to ensure we can quickly respond to crises whenever and wherever necessary.

- The third priority was modernization of the force to ensure future readiness. I pledged to reverse the eleven straight years of decline in the procurement budget and championed transforming the support elements of DoD through continued acquisition reform, adoption of best business practices, and reducing excess infrastructure.

## PEOPLE

We ask much of our men and women in uniform. They are on call 24 hours a day and understand they will be regularly deployed, relocated, and restricted in their lifestyle because of the unique demands of military life. They must be prepared to forge into deadly conflict, and they must be trained to use lethal, cutting-edge technology. We call upon our armed forces to manage complex battlefields that include combatants and civilians, using the skills of both warrior and diplomat.

The end of the post-Cold War drawdown, coupled with an unprecedented strong economy, created major recruitment and retention challenges. As we compete with colleges and civilian industry for America's best and brightest, recruiting enough qualified Soldiers, Sailors, Airmen, and Marines to properly fill our ranks has become especially challenging. This challenge has been exacerbated by the stress of high operating tempo (OPTEMPO) and personnel tempo (PERSTEMPO) on active duty retention and by the extra demands of maintaining aging equipment. To address these challenges, with the strong support of Congress, we have undertaken major improvements in pay and benefits:

- This fiscal year we are implementing the largest pay raise in nearly two decades. The budget we are proposing builds on this with additional pay raises in FY 2001 and FY 2002 that are half a percentage point above inflation.

- Our proposed budget fully funds the significant pay table reforms adopted last year that will reward and help retain our best and most experienced military personnel.

- We proposed, and you fully funded, military retirement reforms that increased retirement benefits for those now at mid-career, ensuring that all our personnel who retire at 20 years will receive 50 percent of their base pay.

- We are proposing a major improvement to housing benefits. We will increase the Basic Allowance for Housing (BAH) so that out-of-pocket expenses for those living off base will be cut from 19 to 15 percent in FY 2001, and eliminate entirely out-of-pocket housing expenses over the Future Years Defense Program (FYDP). Since BAH is tax-free, this increase will put even more money into the pockets of military personnel and their families.

## READINESS ISSUES

U.S. armed forces continue to be fully capable of executing the National Military Strategy, and we continue to take necessary measures to ensure that this remains the case. The QDR found that Operations and Support (O&S) budgets were consistently underfunded, due primarily to a pattern of underestimating O&S costs and overestimating programmed efficiencies and, to a lesser extent, unprogrammed contingency costs. One result was a recurring migration of funds from procurement to pay for immediate readiness requirements, which both delayed procurement programs and increased their cost through program instability and stretch-outs. The QDR sought to attack this problem at its root by rebalancing our overall defense program to fix known and projected deficiencies in O&S budgets and to create a substantially increased but sustainable modernization program.

Our proposed budget fully funds the Services' FY 2001 Operation and Maintenance (O&M) budgets, putting O&M funding per troop at record high levels so that operations, training, and maintenance goals can be met. The proposed budget also fully funds projected FY 2001 costs for operations in Bosnia and Kosovo, with the President having provided an increase of $2.2 billion for these operations. To protect readiness for the rest of the current fiscal year, we are requesting $2 billion in supplemental appropriations to cover DoD's FY 2000 costs for Kosovo operations.

Because of the complexity and pace of these operations, the Defense Department vigilantly assesses readiness indicators, operating tempo, and the impact of our commitments on our people. When possible, we use reserve forces to lift the burden from our first-to-fight units. Additionally, we have increased funding for maintenance and spare parts and changed the way the Department operates in order to enhance and improve unit combat readiness.

## MODERNIZATION

Each year throughout the mid-1990s, the Defense Department leadership identified an annual procurement budget of roughly $60 billion as necessary in order to recapitalize defense equipment and the move toward a transformed force that embodied the Revolution in Military Affairs. But due to the recurring migration of funds to pay for O&S costs and despite the Department's best efforts, the procurement budget continued to decline every year, putting the $60 billion objective further and further out of reach. The QDR staunched this hemorrhage of modernization moneys and established a sustainable procurement program to transform our forces and enable the attainment of *Joint Vision 2010* capabilities. Reversing over a decade of decline, each budget since the QDR has substantially increased procurement. The proposed FY 2001 budget provides $60 billion, an increase of over 33 percent since FY 1997 that meets the projection of the QDR.

The Department's modernization and transformation strategy aims to ensure U.S. military preeminence well into the 21st century. Much about the future security environment is uncertain, but much is already clear. A number of states will have the capability to threaten U.S. vital interests, through coercion, cross-border aggression, and other hostile actions. Other states will face internal humanitarian crises and ethnic conflict which may involve U.S. interests and require the U.S. military to respond quickly while minimizing risks of American and noncombatant casualties. Whether in the context of major theater war or smaller-scale contingencies, future opponents are likely to threaten or use asymmetric methods such as terrorism, cyber attacks on critical computer-based networks, and weapons of mass destruction in order to offset U.S. conventional superiority. Some non-state actors may also threaten U.S. interests through terrorism and other asymmetric means.

Transformed military forces are needed because the strategic environment is changing. Technology, vastly changing the civilian world, is changing the military sphere as well. Exploited effectively, through innovative operational concepts and new organizational arrangements, new information systems and other technologies will allow U.S. forces to be smaller, faster, more agile, more precise, and better protected. In short, U.S. forces will be more capable of meeting the security challenges of the 21st century in order to protect citizens at home and project power abroad.

The Department is transforming its forces to meet future challenges through:

- Service initiatives that explore new concepts to leverage technology and to develop better, faster, and cheaper ways to more effectively support the warfighter operationally and logistically in joint environments.

- Science and technology efforts focused on areas that can enhance U.S. military capabilities to meet projected challenges.

- Efforts to encourage international transformation activities.

In the past year:

- The Air Force has made great strides toward transformation to an Expeditionary Aerospace Force, organized and trained to conduct regular expeditionary operations.

- The Marine Corps has instituted path-breaking, large-scale experiments in conducting urban operations, to be prepared for future missions in a world in which the majority of the population lives in littoral regions.

- The Navy has continued numerous fleet battle experiments, moved toward exploiting electric drive for propulsion of 21st century warships, led the way to integrating information technology throughout the force, and more fully developed its vision for network-centric warfare.

- The Army has initiated a fundamental transformation of its organization, structure, and armaments that will lead to a more agile, mobile force able to meet the requirement to respond rapidly with potent force to crises in distant reaches of the globe.

- The Atlantic Command was transformed to the Joint Forces Command and assigned additional special responsibilities for promoting joint experimentation of revolutionary operational concepts, as well as integrating Service and defense agency capabilities to enhance interoperability and joint readiness.

Since the 1997 Defense Reform Initiative Report was released, significant effort and progress have been made to bring competition and best commercial practices into the business of defense. Since launching the reform initiative, a Defense Management Council of DoD leaders acting as the Secretary's Board of Directors and an advisory panel of Chief Executive Officers from leading

private sector corporations have worked to accelerate the implementation of wide-ranging reforms. DoD continues to meet reform challenges and make progress in adopting 21st century business practices to meet the future needs of U.S. warfighters:

- The Department of Defense is continuing the vigorous transformation of its financial management operations, processes, and systems to meet the information needs of decision makers, satisfy statutory requirements, eliminate fraud and waste, and provide superior customer service. Implementing these reforms will enable DoD decision makers to have the fullest availability of data on costs—so they can allocate resources most wisely and be able to make the best assessment of how well funds are achieving their intended purposes. Finally, this will provide more accurate and timely financial services at the lowest achievable cost.

- The Department also adopted a vision of becoming a world-class buyer of best value goods and services from a globally competitive, industrial base. To accomplish this, the Department has accelerated incorporating the attributes of world-class commercial entities into its processes for acquiring goods and services through aggressive acquisition and logistics reform. The result is a system that provides the warfighter with goods and services better, faster, and cheaper.

- The Department has the world's largest infrastructure—with a physical plant valued at over $500 billion and a landmass that reaches 40,000 square miles. However, the Department is encumbered with obsolete and excess facilities that drain resources that we could otherwise spend on modernization and readiness. DoD is pursuing a three-pronged strategy—eliminate excess infrastructure, consolidate or restructure the operation of support activities, and demolish unneeded buildings. Base Realignment and Closure (BRAC) is an integral part of DoD's readiness and modernization plans to support the warfighter.

## CONCLUSION

Upon taking office, I engaged my priorities—people, readiness, and modernization—to help shape the work of the first QDR, one of the most fundamental and comprehensive reviews ever conducted of our defense posture, policy, and programs.

After analyzing the threats, risks, and opportunities facing the United States until the year 2015, we used the QDR to design a defense strategy to shape the international security environment in ways favorable to U.S. interests; respond to the full spectrum of crises when required; and prepare now for the challenges of the future through focused modernization, new organizations and operational concepts, programs to ensure high-quality people, and hedging against threats that while unlikely would have disproportionately large security implications. After developing this strategy, we anchored its implementation to the fundamentals of military power today and in the future—quality people, ready forces, and superior organization, doctrine, and technology. In the QDR and our subsequent budgets, we have made the necessary choices to ensure that this became reality, not mere rhetoric.

America's security and continued leadership in the world depend upon our military having the resources to accomplish the nation's goals. Our current budget achieves this objective and lays the foundation for a successful future. Most importantly, it supports our Soldiers, Sailors, Airmen, and Marines with our tangible commitment to the quality of life that our military members and their families deserve.

I am proud to report to you that we are meeting the goals I set when I came before you three years ago. My successor will inherit a Department and military, not only far better than that which won the Gulf War, but given our rapid application of lessons learned from Operation Allied Force, better than that which prevailed in the conflict with Belgrade. We in the Defense Department cannot achieve this alone; we will need your continued support to provide for America's security needs in the coming century.

William S. Cohen

# Part I
# Strategy

# Chapter 1

# THE DEFENSE STRATEGY

Since the founding of the Republic, the United States has embraced three fundamental and enduring goals: to maintain the sovereignty, political freedom, and independence of the United States, with its values, institutions, and territory intact; to protect the lives and personal safety of Americans, both at home and abroad; and to promote the well-being and prosperity of the nation and its people.

Achieving these basic goals requires fostering an international environment in which:

- Critical regions are stable, at peace, and free from domination by hostile powers.
- The global economy and free trade are growing.
- Democratic norms and respect for human rights are widely accepted.
- The spread of nuclear, biological, and chemical (NBC) and other potentially destabilizing weapons technologies is minimized.
- The international community is willing and able to prevent and, if necessary, respond to calamitous events.

The United States plays a leadership role in the international community, working closely and cooperatively with nations that share its values and goals, and influencing those that can affect U.S. national well-being.

## THE SECURITY ENVIRONMENT

As the 21st century begins, the United States faces a dynamic and uncertain security environment. There is much that is positive about this environment. The threat of global war remains distant and the nation's core values of representative democracy and market economics are embraced in many parts of the world, creating new opportunities to promote peace, prosperity, and enhanced cooperation among nations. The U.S. economy continues to thrive. Relationships with key allies, such as NATO partners, Japan, the Republic of Korea, and others, are strong and continuing to adapt successfully to meet today's challenges. Former adversaries, like Russia and other former members of the Warsaw Pact, now cooperate with the United States across a range of security issues. Many in the world see the United States as the security partner of choice.

### Current Security Challenges

Despite these positive developments in the international environment, the world remains a complex, dynamic,

and dangerous place. While there is great uncertainty about how the security environment will evolve, the United States will face significant security challenges in the coming years. Precisely when and where these will occur is impossible to predict, but the nature of the challenges falls into several broad categories.

**Cross-Border Aggression.** Some states will continue to threaten the territorial sovereignty of others in regions critical to U.S. interests. In Southwest Asia, Iraq continues to pose a threat to its neighbors and to the free flow of oil from the region. In East Asia, North Korea still poses a highly unpredictable threat in spite of its dire economic and humanitarian conditions. Other states could be aggressors as well. In East Asia, for example, sovereignty issues and several territorial disputes remain potential sources of conflict. Many instances of cross-border aggression will be small-scale in nature; but between now and 2015, it is entirely possible that more than one aspiring regional power will have both the motivation and the means to pose a military threat to U.S. interests.

**Internal Conflict.** Political violence other than cross-border aggression can also threaten U.S. interests. This includes civil wars, internal aggression (e.g., by a state against its own people or by one ethnic group against another), armed uprisings, and civil disturbances. These events can threaten U.S. interests because they may spread beyond the parties initially involved, incur intervention by outside powers, affect U.S. economic interests, or put at risk the safety and well-being of American citizens in the region. Even when important U.S. interests are not threatened, the United States may have a humanitarian interest in protecting the safety, well-being, and freedom of the people affected.

**Development and Proliferation of Dangerous Military Technologies.** The development and proliferation of advanced weapons and technologies with military or terrorist uses, including NBC weapons and their means of delivery, will continue despite the best efforts of the international community. The proliferation of these weapons and technologies could directly threaten the United States, destabilize other regions of critical importance, and increase the number of potential adversaries with significant military capabilities, including smaller states and parties hostile to the United States. The increasing spread of military technologies also raises the potential for countermeasures to U.S. capabilities, as adversaries could attempt to use these weapons and technologies to neutralize the United States' current

overwhelming advantage in conventional military capability.

Of particular concern is the growing threat of a ballistic missile attack on the United States. The threat of missile attack, which was once thought to be remote, is growing significantly as countries such as North Korea and Iran seek to develop and export long-range ballistic missile capabilities. Moreover, the possibility of an accidental or unauthorized launch from Russia or China remains a real, albeit less likely, concern.

**Transnational Threats.** The range of actors that can affect U.S. security and the stability of the broader international community will likely grow in number and capability. Increasingly capable and violent terrorists, for example, will directly threaten the lives of American citizens and their institutions and will seek to undermine U.S. policies and alliances. Terrorist attacks will be directed not only against U.S. citizens and allies abroad but also against U.S. territory and critical infrastructure. The means employed by terrorists could include conventional attacks, information warfare, or even NBC weapons. These attacks will be orchestrated independently or with state backing (potentially in response to conventional conflict with the United States elsewhere in the world) and will be increasingly sophisticated in targeting, propaganda, and political operations. In addition, the illegal drug trade, international organized crime, piracy, and activities aimed at denying U.S. access to vital energy supplies and key strategic resources will serve to undermine the legitimacy of friendly governments, disrupt key regions and sea lanes, and threaten the safety and well-being of U.S. citizens at home and abroad.

**Humanitarian Disasters.** Humanitarian crises can also affect U.S. interests. Failed states, famines, floods, hurricanes, and other natural or man-made disasters will continue to occur, at times requiring the unique capabilities of U.S. military forces to provide stability, disaster relief, and other forms of emergency assistance.

### Potential Security Challenges

In addition to current security challenges, other serious challenges could emerge in the future.

**A Global Peer Competitor.** The United States faces no global rival today, nor will it likely face one through at least 2015. In the period beyond 2015, however, there is the possibility that a regional great power or global peer competitor could emerge. China and Russia appear to have the most potential to be such competitors,

though their respective futures are quite uncertain. China's economy has been growing rapidly, and the People's Liberation Army continues to modernize and increase its capability. China already has a strategic nuclear arsenal that, while not large, can reach the continental United States. China is likely to continue to face a number of internal challenges, however, both economic and political, that may slow the pace of its military modernization.

Russia could, in the coming years, reestablish its capability to project large-scale offensive military forces along its periphery, but this would require substantial preparation that would be visible to the United States. While Russia continues to retain a large nuclear arsenal with both tactical and strategic weapons, its conventional military capabilities—both in terms of power projection and combat sustainability—have weakened significantly. Russia's future will depend in large measure on its ability to develop its economy, which in turn is dependent upon a stable internal political environment. Should Russia's political system fail to stabilize over the long term, disintegration of Russia as a coherent state could pose major security challenges for the United States and the international community.

**Wild Card Scenarios.** In addition to security challenges that the Department projects as likely is the possibility for unpredictable wild card scenarios that could seriously challenge U.S. interests at home and abroad. Such scenarios range from the unanticipated emergence of new technological threats, to the loss of U.S. access to critical facilities and lines of communication in key regions, to the takeover of friendly regimes by hostile parties. While the probability of any given wild card scenario is low, the probability that at least one will occur is much higher, with consequences that could be disproportionately high. Therefore, the United States must maintain military capabilities with sufficient flexibility to deal with such unexpected events.

*The Imperative of Engagement*

Finally, it is important to note that this projection of the security environment rests on two fundamental assumptions: that the United States will remain politically and militarily engaged in the world over the next 15 to 20 years, and that it will maintain its capability as a world-class military power. If the United States were to withdraw from its international commitments, relinquish its diplomatic leadership, or forfeit its military pre-eminence, the world would become an even more dangerous place, and the threats to the United States, its allies, friends, and interests would be even more severe.

## THE PRESIDENT'S NATIONAL SECURITY STRATEGY

To meet the challenges and opportunities presented by this security environment, the Administration has developed a National Security Strategy in accordance with U.S. global interests. The United States will remain engaged abroad, supporting efforts to enlarge the community of secure, free-market, and democratic nations and to create new partners in peace and prosperity. While the United States will retain the capability to act unilaterally when necessary, this strategy emphasizes coalition operations to secure basic U.S. national goals, protect and promote U.S. interests, and create preferred international conditions. Indeed, the nature of the challenges the nation faces demands cooperative, multinational approaches that distribute the burden of responsibility among like-minded states. For example, to effectively curb the proliferation of NBC weapons, the United States must garner the cooperation of other nations that share U.S. nonproliferation goals, as well as key suppliers and transshipment states. Therefore, it is imperative that the United States strives to build close, cooperative relations with the world's most influential countries.

Maintaining a strong military and the willingness to use it in defense of national interests remain essential to a strategy of engagement. Today, the United States has unparalleled military capabilities. As the only nation in the world able to organize, lead, and conduct large-scale, effective, joint military operations far beyond its borders, the United States is in a unique position. Only the United States can organize effective military responses to large-scale regional threats. This ability is the cornerstone of many mutually beneficial alliances and security partnerships and the foundation of stability in key regions of the world. To sustain this position of leadership, the United States must maintain ready and versatile forces capable of conducting a wide range of military activities and operations—from deterring and defeating large-scale, cross-border aggression, to participating in smaller-scale contingencies (SSCs), to dealing with transnational threats like terrorism.

Nevertheless, both U.S. national interests and limited resources argue for the selective use of U.S. forces. Decisions about whether and when to use military

3

forces should be guided, first and foremost, by the U.S. national interests at stake—be they vital, important, or humanitarian in nature—and by whether the costs and risks of a particular military involvement are commensurate with those interests. When the interests at stake are vital—that is, they are of broad, overriding importance to the survival, security, and vitality of the nation—the United States will do whatever it takes to defend them, including, when necessary, the unilateral use of military power. U.S. vital national interests include:

- Protecting the sovereignty, territory, and population of the United States.

- Preventing the emergence of hostile regional coalitions or hegemons.

- Ensuring uninhibited access to key markets, energy supplies, and strategic resources.

- Deterring and, if necessary, defeating aggression against U.S. allies and friends.

- Ensuring freedom of the seas, airways, and space, as well as the security of vital lines of communication.

In other cases, the interests at stake may be important but not vital—that is, they do not affect the nation's survival but do significantly affect the national well-being and the character of the world in which Americans live. In these cases, military forces will be used only if they advance U.S. interests, are likely to accomplish their objectives, and other means are inadequate to accomplish U.S. goals. Such uses of the military will be both selective and limited, reflecting the relative saliency of the U.S. interests involved.

When the interests at stake are primarily humanitarian in nature, the decision to commit U.S. military forces will depend on the magnitude of the suffering, the ability of U.S. military forces to alleviate this suffering, and the expected cost to the United States both in terms of American lives and materiel, and in terms of limitations on the United States' ability to respond to other crises. Military forces will be committed only if other means have been exhausted or are judged inadequate.

In all cases where the commitment of U.S. forces is considered, determining whether the associated costs and risks are commensurate with the U.S. interests at stake is central. Such decisions also require identification of a clear mission, the desired end state of the situation, and a strategy for withdrawal once goals are achieved.

## THE DEFENSE STRATEGY

To support the imperative of engagement set forth in the National Security Strategy, the Department of Defense laid out the national defense strategy and resultant defense program in the 1997 *Report of the Quadrennial Defense Review* (QDR). The QDR harnesses U.S. leadership to promote the nation's interests throughout the 1997-2015 period. The strategy directs the Defense Department to help shape the international security environment in ways favorable to U.S. interests, respond to the full spectrum of crises when directed, and prepare now to meet the challenges of an uncertain future. These three elements—shaping, responding, and preparing—define the essence of U.S. defense strategy between now and 2015.

### Shaping the International Environment

In addition to other instruments of national power, such as diplomacy and economic trade and investment, the Department of Defense plays an essential role in shaping the international security environment in ways that promote and protect U.S. national interests. The Department employs a wide variety of means to carry out shaping activities including:

- Forces permanently stationed abroad.

- Forces rotationally deployed overseas.

- Forces deployed temporarily for exercises, combined training, or military-to-military interactions.

- Programs such as defense cooperation, security assistance (e.g., the International Military Education and Training and Foreign Military Sales programs), and international arms cooperation.

- Regional academic centers (of which there are currently four: the Marshall Center, Asia Pacific Center, Center for Hemispheric Studies, and African Center for Strategic Studies) that provide training in Western concepts of civilian control of the military, conflict resolution, and sound defense resource management for foreign military and civilian officials.

Relatively small and timely investments in such activities can yield disproportionate benefits in terms of limiting or preventing crises, often mitigating the need for a more substantial and costly U.S. response later.

These activities shape the international security environment in three main ways.

**Promoting Regional Stability.** The Department of Defense promotes regional stability by facilitating regional cooperation, supporting democratization, and enhancing transparency with potential adversaries.

Facilitating Regional Cooperation. The U.S. military can play a significant role in promoting stability by facilitating cooperation between potential regional rivals. Participation in multilateral alliances with the United States, for example, requires potential rivals to cooperate with each other at a number of military and political levels, contributing to mutual transparency, trust, and confidence-building. Even when potential rivals are not part of a multilateral security arrangement, the United States can make use of its bilateral security relationships with them to encourage cooperation, act as an honest broker, and reassure them about each other's intentions. Similarly, enhanced interoperability also contributes to achieving transparency and building trust and confidence.

Supporting Democratization. Military contacts with non-democratic or newly democratic countries promote democratization. These contacts demonstrate U.S. interest in the democratization process in those countries and help facilitate the development of democratic civil and military institutions—both through formal education and training exchanges, and simply through the example that the United States military provides of professional armed forces under civilian control.

Enhancing Transparency with Potential Adversaries. Military contacts with potential adversaries can help shape the security environment in two ways: they can increase mutual understanding about each other's national defense organizations and decision making processes, decreasing the likelihood of hostility or confrontation based on misperception; they can also heighten potential adversaries' appreciation for U.S. military capabilities and professionalism, reinforcing for them the costs of military adventurism.

**Preventing or Reducing Conflicts and Other Threats.** The Department of Defense prevents conflicts and other threats by limiting the prevalence of dangerous military technologies, combating transnational threats, and providing security reassurance.

Limiting the Prevalence of Dangerous Military Technologies. DoD limits the prevalence of dangerous military technologies both through efforts to actually reduce or eliminate NBC capabilities—as is being done with the U.S.-North Korean Agreed Framework; the Cooperative Threat Reduction program with Russia, Ukraine, and Kazakhstan; and the Chemical Weapons Convention—and through activities to prevent the proliferation of NBC weapons and their means of delivery, as is being done by DoD efforts to monitor and support agreements like the Nuclear Non-Proliferation Treaty and the Missile Technology Control Regime.

Combating Transnational Threats. DoD combats transnational threats through its activities to prevent terrorism and reduce U.S. vulnerability to terrorist acts and to reduce the production and flow to the United States of illegal drugs. Such activities include efforts to enhance intelligence collection capabilities, protect critical infrastructure (including combating cyber-terrorism), and support joint interagency counterdrug task forces operating overseas and in international air and sea space contiguous to U.S. borders.

Providing Security Reassurance. The presence of U.S. military forces overseas, including the preventive deployment of U.S. military personnel where appropriate, reassures countries and peoples that the United States is committed to peace and security in that region, reducing the likelihood of conflict by alleviating mutual security concerns and lowering tensions.

**Deterring Aggression and Coercion.** A vital aspect of the military's role in shaping the international security environment is deterring aggression and coercion in key regions of the world on a day-to-day basis. The United States' ability to deter potential adversaries in peacetime rests on several factors:

- A declaratory policy and overseas presence that effectively communicate U.S. security interests and commitments throughout the world.

- A demonstrated will to uphold U.S. security commitments when and where they are challenged.

- Conventional warfighting capabilities that are credible across the full spectrum of military operations and are rapidly deployable overseas.

- A demonstrated ability to form and lead effective military coalitions.

The U.S. nuclear posture also contributes substantially to the ability to deter aggression against the United States, its forces abroad, and its allies and friends. Although the prominence of nuclear weapons in the nation's defense has diminished since the end of the Cold War, nuclear weapons remain important as one of

a range of responses available to deal with threats or use of NBC weapons against U.S. interests. They also serve as a hedge against the uncertain futures of existing nuclear powers and as a means of upholding U.S. security commitments to U.S. allies. In this regard, U.S. nuclear forces based in Europe and committed to NATO provide an essential political and military link between the European and North American members of the Alliance, and permit widespread European participation in all aspects of the Alliance's nuclear role. Thus, for the foreseeable future, the United States will retain a robust triad of sufficient nuclear forces—based on flexible and survivable strategic systems—under highly confident, constitutional command and control which safeguards against accidental and unauthorized use. The Department believes these goals can be achieved at lower force levels and continues to take the lead in exploring new arms reduction opportunities. The United States is poised to begin mutual early deactivation of systems which will be eliminated under START II once the Russian government ratifies the treaty, and to begin negotiating further reductions in a START III context as called for by the 1997 Helsinki Joint Statement.

## Responding to the Full Spectrum of Crises

Despite the Department's best efforts to shape the international security environment, the U.S. military will, at times, be called upon to respond to crises in order to protect national interests, demonstrate U.S. resolve, and reaffirm the nation's role as a global leader. Therefore, U.S. forces must also be able to execute the full spectrum of military operations, from deterring an adversary's aggression or coercion in crisis and conducting concurrent smaller-scale contingency operations, to fighting and winning major theater wars. They must be capable of doing so either unilaterally or as part of a coalition.

**Deterring Aggression and Coercion In Crisis.** In many cases, the first stage of responding to a crisis consists of efforts to deter an adversary so that the situation does not require a greater response. Deterrence in a crisis generally involves signaling the United States' commitment to a particular country or expressing its national interest by enhancing U.S. warfighting capability in the region. The United States' ability to respond rapidly and substantially as a crisis develops can have a significant deterrent effect. The readiness levels of deployable forces may be increased, forces deployed in the area may be moved closer to the crisis, and forces from the United States may be rapidly deployed to the area. The

United States may also choose to make additional declaratory statements to communicate its intentions and the costs of aggression or coercion to an adversary. In some cases, the nation may choose to employ U.S. forces in a limited manner (e.g., to enforce sanctions or conduct limited strikes) to underline this message and deter further adventurism.

**Conducting Smaller-Scale Contingency Operations.** In general, the United States, along with others in the international community, will seek to prevent and contain localized conflicts and crises before they require a military response. However, if such efforts do not succeed, swift intervention by military forces may be the best way to contain, resolve, or mitigate the consequences of a conflict that could otherwise become far more costly and deadly. These operations encompass the full range of joint/combined military operations beyond peacetime engagement activities but short of major theater warfare. They include show-of-force operations, coercive campaigns, limited strikes, noncombatant evacuation operations, no-fly zone enforcement, maritime sanctions enforcement, migrant operations, counterterrorism operations, peace operations, foreign humanitarian assistance and disaster relief operations, and emergency operations overseas in support of other U.S. government agencies.

Selective participation in SSC operations can serve a variety of U.S. interests. For example, U.S. forces are sometimes called upon to conduct noncombatant evacuations, protecting U.S. citizens caught in harm's way. The United States might also choose to deploy forces to an intervention or peacekeeping operation in order to support democracy where it is threatened or to restore stability in a critical region. In addition, when rogue states defy the community of nations and threaten common interests, the United States may use its military capabilities—for instance, through maritime sanctions enforcement or limited strikes—to help enforce the international community's will and deter further coercion. And when natural disaster strikes at home or abroad, U.S. values and interests might call for the use of the unique capabilities of military forces to jump-start relief efforts, enabling other elements of the U.S. government or international community to carry out longer-term relief efforts.

Based on recent experience and intelligence projections, the demand for SSC operations is expected to remain high over the next 15 to 20 years. U.S. participation in SSC operations will be selective, depending largely on the interests at stake and the risk of major

aggression elsewhere. However, these operations will likely continue to pose the most frequent challenge for U.S. forces through 2015 and may require significant commitments of both active and reserve forces.

**Fighting and Winning Major Theater Wars.** At the high end of the continuum of possible crises is fighting and winning major theater wars. This mission is the most demanding requirement for the U.S. military. In order to protect American interests around the globe, U.S. forces must continue to be able to overmatch the military power of regional states with interests hostile to the United States. Such states are often capable of fielding sizable military forces that can cause serious imbalances in military power within regions important to the United States. The power of potentially aggressive states often exceeds that of U.S. allies and friends in the region. To deter aggression, prevent coercion of allied or friendly governments, and defeat aggression should it occur, the Department must prepare U.S. forces to confront this scale of threat far from home, in concert with allies and friends, but unilaterally if necessary. Toward this end, the United States must have jointly trained and interoperable forces that can deploy quickly from a posture of global engagement—across great distances to supplement forward-stationed and forward-deployed U.S. forces—to assist a threatened nation or ally, rapidly stop enemy aggression, and defeat an aggressor, including in an environment of NBC weapons threat or use.

As a global power with worldwide interests, it is imperative that the United States, now and for the foreseeable future, be able to deter and defeat nearly simultaneous large-scale, cross-border aggression in two distant theaters in overlapping time frames, preferably in concert with regional allies. Maintaining this core capability is central to credibly deterring opportunism—that is, to avoiding a situation in which an aggressor in one region might be tempted to take advantage when U.S. forces are heavily committed elsewhere—and to ensuring that the United States has sufficient military capabilities to deter or defeat aggression by an adversary that is larger, or under circumstances that are more difficult, than expected. This is particularly important in a constantly evolving and unpredictable security environment. The United States can never know with certainty when or where the next major theater war will occur, who the next adversary will be, how an enemy will fight, who will join in a coalition, or precisely what demands will be placed on U.S. forces.

This capability also reassures U.S. allies, makes coalition relationships with the United States more attractive and enduring, and gives the United States greater influence and access in shaping the global security environment, helping to promote stability and preclude such major theater war threats from developing. Without it, the United States could be inhibited from responding to a crisis promptly enough, or even at all, for fear of committing its only forces and thereby making itself vulnerable in other regions of the world.

In this dynamic, uncertain security environment, the United States must continually reassess its security challenges, U.S. defense strategy, and the associated military requirements. If the security environment were to change dramatically and threats of large-scale aggression were to grow or diminish significantly, it would be both prudent and appropriate for the United States to review and reappraise its strategy and warfighting requirements. Such a reappraisal must recognize that the security environment can change rapidly and in unexpected ways, and that the full spectrum of U.S. military capabilities must be maintained in order to be able to deter or respond to the emergence of currently unforeseen challenges.

### Preparing Now for an Uncertain Future

In addition to meeting the immediate challenges of a dangerous world through shaping activities and responding to crises, U.S. forces must also be able to shape and respond effectively in the future. As the nation moves into the 21st century, it is imperative that it maintain its military superiority in the face of evolving, as well as discontinuous, threats and challenges. Without such superiority, the United States' ability to exert global leadership and to create international conditions conducive to the achievement of its national goals would be in doubt.

To maintain this superiority, the United States must achieve a new level of proficiency in its ability to conduct joint and combined operations. This proficiency can only be achieved through a unified effort by all elements of the Department toward the common goal of full-spectrum dominance envisioned in *Joint Vision 2010*, the Chairman of the Joint Chiefs of Staff's conceptual blueprint for future military operations. Implementing *Joint Vision 2010* requires developing the doctrine, organization, training and education, materiel, leadership, and people to support truly integrated joint operations. Achieving this new level of proficiency also

requires improving the U.S. military's methods for integrating its forces and capabilities with those of its allies and coalition partners.

The Department's commitment to preparing now for an uncertain future has four main parts:

- A focused modernization effort aimed at replacing aging systems and incorporating cutting-edge technologies into the force to ensure continued U.S. military superiority over time.

- Pursuing the Revolution in Military Affairs in order to improve the U.S. military's ability to perform near-term missions and meet future challenges.

- Exploiting the Revolution in Business Affairs to radically reengineer DoD infrastructure and support activities.

- Hedging against unlikely, but significant, future threats in order to manage risk in a resource-constrained environment and better position the Department to respond in a timely and effective manner to new threats as they emerge.

**Focused Modernization Efforts.** Fielding modern and capable forces in the future requires aggressive action today. Just as U.S. forces won the Gulf War with weapons that were developed many years before, tomorrow's forces will fight with weapons that are developed today and fielded over the next several years. Today, the Department is witnessing a gradual aging of the overall force. Many weapons systems and platforms purchased in the 1970s and 1980s will reach the end of their useful lives over the next decade or so. In response, the Department has substantially increased procurement spending so that it can ensure tomorrow's forces are every bit as modern and capable as today's. Sustained, adequate spending on the modernization of U.S. forces is essential to ensuring that tomorrow's forces retain the capability to dominate across the full spectrum of military operations.

**Pursuing the Revolution in Military Affairs.** The U.S. military's modernization effort is directly linked to the broader challenge of transforming its forces to retain military superiority in the face of changes in the nature of warfare. Just as earlier technological revolutions have affected the character of conflict, so too will the technological change that is so evident today. This transformation involves much more than acquiring new military systems. It also means developing advanced concepts, doctrine, and organizations so that U.S. forces

can dominate any future battlefield. DoD will continue to foster both a culture and a capability to develop and exploit new concepts and technologies with the potential to make U.S. military forces qualitatively more effective. Part III describes in detail the Department's strategy and activities toward transforming its military forces through the Revolution in Military Affairs.

**Exploiting the Revolution in Business Affairs.** A Revolution in Business Affairs is also in progress. Efforts to reengineer the Department's infrastructure and business practices must parallel the work being done to exploit the Revolution in Military Affairs if the nation is to afford both adequate investment in preparations for the future, especially a more robust modernization program and capabilities sufficient to support an ambitious shaping and responding strategy through 2015. Measures are aimed at shortening cycle times, particularly for the procurement of mature systems; enhancing program stability; conserving scarce resources; ensuring that acquired capabilities will support mission outcomes; ensuring that critical infrastructures deliver the right services to the right users at the right time; increasing efficiencies; and assuring management focus on core competencies, while freeing resources for investment in high-priority areas.

These measures will require changes in political and public thinking about the infrastructure that supports the U.S. force. This thinking must be flexible, open to new solutions, and focused on the bottom line—support for U.S. forces. The QDR itself examined a large number of options and proposed a number of steps in this area, but much more fundamental work must be done to radically reengineer the Department's institutions. To build the forces envisioned in *Joint Vision 2010*, DoD will need to develop additional programs in the years beyond the Future Years Defense Program. To afford those programs, the Department will need both the vision and the will to shrink and make dramatically more efficient its supporting infrastructure. Efforts to transform the Department are covered in more detail in Part IV.

**Hedging Against Unlikely But Significant Future Threats.** The fourth element of preparing is taking prudent steps today to position DoD to respond more effectively to unlikely, but significant, future threats, such as the early emergence of a regional great power or a wild card scenario. Such steps provide a hedge against the possibility that unanticipated threats will emerge. The Department will focus these efforts on threats that,

although unlikely, would have highly negative consequences that would be very expensive to counter. Although such insurance is certainly not free, in an uncertain, resource-constrained environment, there are relatively inexpensive ways to manage the risk of being unprepared to meet a new threat, developing the wrong capabilities, or producing a capability too early and having it become obsolete by the time it is needed. Such an approach can also provide an opportunity to delay or forego costly investments in future capabilities the United States may not need.

Among the necessary hedging steps are maintaining a broad research and development (R&D) effort, using advanced concept technology demonstrations, continued contact with industries developing new technologies, and cooperation with allies who may develop new approaches to resolving problems. Hedging against the emergence of new threats also requires ensuring that the U.S. military has the necessary intelligence capabilities for long-term strategic indications and warning.

The Department's activities in all four of these areas are only the initial steps in a continuing process. Preparing now for an uncertain future must become a central component of the DoD culture and a continuing focus of the Department's efforts.

## REGIONAL APPLICATIONS OF THE STRATEGY

In each region of the world, the Department of Defense undertakes activities in an effort to secure U.S. national security interests. In addition to those vital U.S. interests stated earlier, each region presents its own unique opportunities and challenges. The Department's strategies for dealing with these various regional challenges are critical to its overall effort to shape the international environment and remain prepared to respond to the full range of crises. Indeed, how the United States uses force and its forces sends a clear signal to friends and foes throughout the world about its interests, influence, and values.

### Europe

**U.S. Defense Objectives.** U.S. defense efforts in Europe are aimed at achieving a peaceful, stable region where an enlarged NATO, through U.S. leadership, remains the preeminent security organization for promoting stability and security. Further, the United States

seeks positive and cooperative Russian-NATO and Ukrainian-NATO relations and strengthened relations with Central and Eastern European nations outside of NATO. The United States desires a region in which all parties peacefully resolve their religious, political, and ethnic tensions through existing security structures and mechanisms. The United States and European nations should also work together to counter drug trafficking, terrorism, and the proliferation of NBC weapons and associated delivery systems.

**U.S. Regional Defense Posture and Activities.** The importance of European security to U.S. interests is made clear by the approximately 100,000 American servicemen and women stationed on the continent and the continuous presence of U.S. naval forces in the Mediterranean. Along with the many routine deployments of U.S.-based personnel, these forces ensure that the United States maintains an active and prominent role in NATO and in outreach efforts to NATO's partners in the region. European-based U.S. forces are also often the first forces to respond to emerging crises in Europe, Africa, and the Middle East.

To promote new responses backed by new capabilities, DoD recognizes that the security environment NATO will face in the future is fundamentally different from the past and will continue to evolve. With the end of the Cold War, the United States and its European allies and partners are faced with a new strategic environment. In lieu of yesterday's monolithic threat, today's risks are unpredictable, multidirectional, and multidimensional. Through its experience in Bosnia, NATO learned that it needed to develop more mobile, flexible, sustainable, and survivable forces, capable of effective engagement. At its 50th Anniversary Summit in Washington in April 1999, the Alliance approved the DoD-proposed Defense Capabilities Initiative that addresses these critical factors. This initiative will enhance allied military capabilities in five key areas: deployability and mobility, sustainability and logistics, effective engagement, survivability of forces and infrastructure, and command and control and information systems.

In support of the broader transformation of European defense capabilities, the United States welcomes the NATO-anchored European Security and Defense Identity initiative, aimed at enhancing European capacity to take responsibility for and contribute to NATO objectives. The United States actively supports an enhanced role for partner nations, including Russia and Ukraine. The United States also welcomes the reaffirmation of

NATO's open door policy towards potential new members. Through its active involvement in NATO's Southeastern Europe Initiative and the Southeastern Europe Defense Ministerial process, the United States is fostering cooperative structures involving allies and partners that, over time, can make significant contributions to increasing security and stability in the region. These structures are engaged in practical steps that range from strengthening multilateral peace support capabilities to improving information-sharing networks and military engineering skills in support of broader civil-military emergency planning and response efforts. Similarly, cooperation between the United States and each of the countries of Central Europe on the issue of accounting for missing American service personnel fosters trust and confidence essential to assuring the success of an expanded NATO partnership.

### The New Independent States

**U.S. Defense Objectives.** The United States seeks the development of Russia, Ukraine, and the other New Independent States into stable market democracies fully integrated into the international community and cooperative partners in promoting regional security and stability, arms control, and counterproliferation. Integral to this goal is U.S. support of efforts to secure and stem the proliferation risk posed by former Soviet NBC weapons, weapons materials, and associated delivery systems or technologies, and to eliminate any former Soviet nuclear delivery systems remaining in the New Independent States other than Russia. DoD supports these efforts in part by working with the New Independent States (NIS) to eliminate NBC weapons, control the materials and technology to produce them, and advance indigenous capabilities to secure borders against their unauthorized shipment. Also integral to promoting regional security and stability, arms control, and counterproliferation is U.S. defense and military cooperation with the armed forces of the NIS, which seeks to reinforce their ongoing processes of restructuring and reform. The United States wants Russia to play a constructive role in European affairs, as exemplified by Russia's role in peacekeeping operations in Bosnia and Kosovo. The United States wants to further develop the NATO-Russian partnership, as well as the NATO-Ukraine partnership promoting Ukraine's integration into European and Euro-Atlantic institutions. The United States further seeks a peaceful resolution to the ethnic and regional tensions in the New Independent States and enhanced cooperation in the fight against illegal weapons and drug trafficking, terrorism, international organized crime, and environmental degradation.

**U.S. Regional Defense Posture and Activities.** The Department of Defense contributes substantially to overarching U.S. security objectives in the region. In its bilateral foreign military exchanges with the NIS, the Department seeks to improve operational cooperation with their armed forces and to instill the principles of civilian leadership, defense resources management, sufficiency and transparency, and military reform and restructuring into NIS defense decision making. Such military interactions help overcome the mutual distrust and suspicion that are a legacy of the Cold War and create the basis for interoperability between U.S. and NIS armed forces. These bilateral efforts are complemented by multinational efforts, including those conducted through the Partnership for Peace program, the Organization for Security and Cooperation in Europe, and other organizations. The Joint Contact Team Program, State Partnership Program, and the Marshall Center are key programs which support this effort. The Department will continue to broaden military and civilian defense contacts; support the enhanced security for and dismantlement of Russian nuclear, chemical, and biological weapons and associated facilities; and conduct, bilaterally and as part of NATO, combined training and exercises with the New Independent States to strengthen their interoperability with NATO and improve their capabilities for multinational operations. Continued cooperation on efforts to account for missing American service personnel also remains a high-priority issue in the bilateral relationships between the United States and the New Independent States.

### East Asia and the Pacific Rim

**U.S. Defense Objectives.** The United States seeks a stable and economically prosperous East Asia that embraces democratic reform and market economics. Central to achieving this goal are the United States' strong alliance relationships within the region, especially with Japan, Australia, and the Republic of Korea (ROK). In addition, it is critical to continue to engage China so that it contributes to regional stability and acts as a responsible member of the international community. The United States desires a peaceful resolution of the Korean conflict resulting in a non-nuclear, democratic, reconciled, and ultimately reunified Peninsula, as well as the peaceful resolution of the region's other disputes, including that between Taiwan and the

People's Republic of China. Successful counters to terrorism, illegal drug trafficking, and NBC proliferation are also major U.S. goals for the region. Finally, the United States seeks the fullest possible accounting for missing U.S. service personnel in Asia.

**U.S. Regional Defense Posture and Activities.** The United States is committed to maintaining its current level of military capability in East Asia and the Pacific Rim. This capability allows the United States to play a key role as security guarantor and regional balancer. The United States will continue a forward presence policy, in cooperation with its allies, that reflects its interests in the region and allows for adjustments in the U.S. force posture over time to meet the changing demands of the security environment. Today, the United States stations or deploys approximately 100,000 military personnel in the region. Of these personnel, over half are stationed in Japan and close to 40 percent are in the ROK. The United States will seek to continue and build upon bilateral and multilateral exercises with key states in the region, including the ROK, Japan, Thailand, the Philippines, and Australia.

The most significant near-term danger in the region is the continuing military threat posed by the Democratic People's Republic of Korea. The United States remains fully committed to its treaty obligations to assist the ROK in defending against North Korean aggression. The United States also seeks a Korean Peninsula free of NBC weapons—a goal shared with the ROK and other allies and friends in the region. The U.S.-North Korean Agreed Framework froze North Korea's nuclear facilities at Yongbyon and Taechon under International Atomic Energy Agency inspection. The Agreed Framework still provides the best means to secure North Korean compliance with its nonproliferation commitment under the Nuclear Non-Proliferation Treaty. The Department is also working with its Pacific allies to enhance their collective capabilities to deter and defeat use of chemical or biological weapons.

The U.S. security alliance with Japan is the linchpin of its security policy in Asia and is key to many U.S. global objectives. Both nations have moved actively in recent years to strengthen this bilateral relationship and update the framework and structure of joint cooperation to reflect the security environment. U.S. efforts to build on strong alliances with other nations in the region, especially Australia, buttress the U.S. goal of ensuring stability in Southeast Asia, an area of growing economic and political importance. The continued strengthening

of U.S. security dialogues and confidence-building measures with the members of the Association of Southeast Asian Nations (ASEAN) through the ASEAN Regional Forum is one of many ways in which the United States is working to enhance political, military, and economic ties with friends and allies in Southeast Asia. The Asia-Pacific Center for Security Studies is a key U.S. initiative that promotes mutual understanding and cooperation by providing an academic forum for military and civilian decision makers from the United States and Asia to exchange ideas and explore regional security challenges.

The Asian financial crisis has shaken the region's assumptions about uninterrupted economic development. Indonesia's economic and political difficulties in particular will pose challenges to the established order both internally and in the region. Continued U.S. engagement in Indonesia will help promote the stability necessary to manage this difficult period of change.

Because of China's critical importance in the Asia-Pacific region, the United States is working to integrate China more deeply into the international community. Specifically, the United States engages China in order to promote regional stability and economic prosperity while securing China's adherence to international standards on weapons nonproliferation, international trade, and human rights. The United States also seeks greater transparency in China's defense program, including its planning and procurement processes, and will continue to engage China in dialogue aimed at fostering cooperation and confidence-building. Military exchange programs, port visits, and professional seminars contribute to this dialogue and are aimed at building lasting relationships that will foster cooperation and build confidence among U.S. and Chinese leaders.

### The Middle East and South Asia

**U.S. Defense Objectives.** The United States seeks a Middle East and South Asia at peace, where access to strategic natural resources at stable prices is unhindered and free markets are expanding. The region cannot be stable until there is a just, lasting, and comprehensive peace between Arabs and Israelis and a peaceful resolution to Indian-Pakistani disputes. Stability also cannot be achieved until Iraq, Iran, and Libya abide by international norms and no longer threaten regional security. The Department, through the Cooperative Defense Initiative and various multilateral processes, is working actively with regional partners to address and deter the threat or use of chemical and biological weapons or

long-range missiles by these states. DoD efforts will also concentrate on thwarting further proliferation of NBC technologies and successfully countering terrorism. The United States must continue working with regional allies and improving U.S. force capabilities to ensure that U.S.-led coalition forces have the ability to fight and win in an NBC environment. Stability in South Asia depends on improved relations between India and Pakistan, and a commitment from both countries to exercise restraint in their nuclear, missile, and chemical and biological weapons policies and practices.

**U.S. Regional Defense Posture and Activities.** The United States military presence in this region includes a limited long-term presence and a larger number of rotational and temporarily deployed forces. An average of 15,000 U.S. military personnel, as well as prepositioned critical materiel, are in the region to deter aggression and promote stability. These forces enforce United Nations resolutions, ensure free access to resources, and work with regional partners to improve interoperability and regional nations' self-defense capabilities. The close military relationships developed with friends throughout the Middle East and South Asia, complemented by U.S. security assistance programs, contribute to an environment that allows regional states to more readily and effectively support U.S. crisis response deployments. This contribution is integral to U.S. deterrence efforts.

While the United States cannot impose solutions on regional disputes, its unique military and political position demands that it play an active role in promoting regional stability and advancing the cause of peace. In conjunction with diplomatic efforts, the U.S. military will continue to use military-to-military contacts as a means of promoting transparency, enhancing the professionalism of regional armed forces, and demonstrating the value of support for human rights and democratic values. Until South Asia's nonproliferation issues are satisfactorily resolved, the U.S. military's role in the region will focus on supporting multinational efforts to stabilize the region and safeguard international nonproliferation norms. The United States will also encourage participation by regional parties, where appropriate, in peace operations to help resolve international conflicts and promote regional cooperation.

## The Americas

**U.S. Defense Objectives.** The United States desires all members of the Western hemispheric community to be peaceful, democratic partners in economic prosperity. U.S. defense strategies seek to have these nations exhibit a strong commitment to civilian leadership of their armed forces, constructive civil-military relations, respect for human rights, and restraint in acquisition of arms and military budgets. The United States also believes that the peaceful resolution of the region's territorial disputes is particularly important. Transparency of military holdings and expenditures and the widespread use of confidence- and security-building measures directly and positively affect this goal. The United States is committed to maintaining the neutrality of the Panama Canal and freedom of navigation along the region's sea lines of communication. Finally, successful counters to the region's drug cultivation, production, and trafficking; arms trafficking; terrorism; NBC weapons proliferation; organized crime; and illegal migration and refugee flows are all central to U.S. territorial security and integrity.

**U.S. Regional Defense Posture and Activities.** Over 50,000 active duty and reserve personnel from the United States pass through the Caribbean and Latin America every year to participate in exercises, nation assistance, counterdrug support, instruction in demining operations, and other engagement activities.

The Department expends significant energy and time in encouraging the increasing acceptance by militaries in the region of their appropriate role in a constitutional democracy. These efforts include bilateral working groups, as well as the multilateral Defense Ministerial of the Americas. The Defense Ministerial brings together the defense ministers from the hemisphere's democracies to discuss common concerns, which enhances transparency, reduces suspicions, and promotes an appropriate role for the military in a democratic society.

Transnational threats are particularly troublesome in the Americas. Because illegal drug trafficking and associated criminal activity threaten the United States and its interests in the region, DoD will continue to support other agencies in trying to stop the flow of illegal drugs, both at the source and in transit, and will encourage and assist other nations committed to antidrug efforts. DoD will also continue to support other agencies' efforts to control illegal migration in the Caribbean Basin bound for U.S. shores through surveillance and temporary internment of undocumented migrants as required at Guantanamo Bay Naval Station.

12

## Sub-Saharan Africa

**U.S. Defense Objectives.** The goals of U.S. defense activities in Sub-Saharan Africa are to promote regional stability and to foster democratic governance so that African military services adhere to the democratic principle of civilian control of the military; African military units conduct operations and training in a professional manner, respecting recognized international human rights and military conduct standards; African Ministries of Defense design and organize their military forces to correspond with legitimate self-defense requirements and effectively manage resources allocated by civil authorities; and African military organizations have the capability to conduct national self-defense and can participate in sub-regional humanitarian relief operations and peacekeeping missions.

**U.S. Defense Posture and Activities.** To achieve these objectives, the Department of Defense actively engages subregional organizations; develops partnerships with key African states; engages problem states, as appropriate; cooperates and coordinates, rather than competes, with allied programs and initiatives; strengthens African strategic leadership to prepare for the 21st century; prepares prudently, and when necessary, responds decisively. U.S. regional defense activities and resources for sub-Saharan Africa, however, are limited. To best manage scarce resources effectively, the Department prioritizes programs and activities in relation to an African partner's stability and its relative importance to U.S. national interests. Countries receive appropriate resources, activities, or programs that fall in one or more of the following categories: defense reform, military professionalism, conflict resolution and peace operations, technology, and health and environment. Activities and resources include military education and training programs, combined exercises, peacekeeping training and military humanitarian, and civic action programs. In this way, the Department of Defense tailors its activities to support United States security objectives and develop African partnerships where professionalism, self-defense, and respect for civilian control are the norm.

## CONCLUSION

The defense strategy laid out above, and detailed in the *Report of the Quadrennial Defense Review*, provides a path for the United States to protect and promote its national interests in the current and projected security environment. The United States must remain engaged as a global leader and harness the unmatched capabilities of its armed forces to shape the international security environment in favorable ways, respond to the full spectrum of crises when it is in U.S. interests to do so, and prepare now to meet the challenges of an uncertain future. This three-pronged strategy and the military missions inherent in it provide a common foundation for the Department's programs and activities.

BLANK  PAGE

# Chapter 2

# THE MILITARY REQUIREMENTS OF THE DEFENSE STRATEGY

To meet the near-term requirements of shaping the international environment and responding to the full spectrum of crises, U.S. forces must have a broad range of unmatched military capabilities. U.S. forces are sized and shaped not only to meet known current threats, but also to succeed in a broad range of anticipated missions and operational environments. The structure of the U.S. military is designed to give national leaders a range of viable options for promoting and protecting U.S. interests in peacetime, crisis, and war. The depth and breadth of U.S. military capabilities were demonstrated most recently in the conflict over Kosovo, where U.S. forces proved more than capable of meeting the demands of that conflict while remaining prepared to meet other requirements associated with the defense strategy.

## OVERARCHING CAPABILITIES – CHARACTERISTICS OF A FULL-SPECTRUM FORCE

The broad demands of the strategy require a full array of military capabilities from all military services—Army, Navy, Air Force, Marine Corps—and from all components—active, reserve, guard, civilian. (See Table 1 for breakdown of the force by Service and component.) This full-spectrum force must be of sufficient size and scope to meet the most demanding missions, including defeating large-scale, cross-border aggression in two theaters nearly simultaneously, conducting the full range of smaller-scale contingency (SSC) operations, and supporting routine shaping activities.

This full-spectrum force must not only be capable across mission areas but it must also be highly versatile. For example, the same forces that conduct routine shaping and engagement missions must also be prepared to participate in SSC operations or, if necessary, to fight and win in major theater wars. This requires that U.S. forces as a whole be superbly trained and maintain the highest possible readiness standards. The force must have equipment that is versatile across a range of missions or, in some selected cases, with equipment that is tailored to performing a critical task associated with a single mission or select group of missions.

The force must also be highly mobile and responsive, able to meet the demands of the strategy by responding to challenges in many different parts of the globe. This requires integrated air, sea, and land transportation

15

assets to provide the needed mobility and a comprehensive set of basing, infrastructure, and access arrangements with allies and friends to facilitate military operations in distant locations. Where possible, it also requires prepositioned stocks and equipment in critical areas to reduce deployment times and facilitate the rapid transition to combat operations.

| Table 1 | | |
|---|---|---|
| Major Conventional Force Elements FY 2001 | | |
| | Active | Reserve/ National Guard |
| Army | | |
| Divisions | 10 | 8 |
| Armored Cavalry Regiments | 2 | 1 |
| Enhanced Separate Brigades | 0 | 15 |
| Navy | | |
| Aircraft Carriers | 12 | 0 |
| Attack Submarines | 55 | 0 |
| Surface Combatants | 108 | 8 |
| Air Force | | |
| Fighter Wings | 12+ | 7+ |
| Bombers* | 163 | 27 |
| Marine Corps | | |
| Divisions | 3 | 1 |
| Air Wings | 3 | 1 |
| * Total inventory. | | |

The effective employment of this full-spectrum force rests both on the ability to maintain forward-deployed and forward-stationed forces in peacetime, and on the ability to project power quickly in crisis and war. It rests also on a range of enabling capabilities that support the full array of military operations.

## Overseas Presence

Maintaining a substantial overseas presence is vital to both the shaping and responding elements of the defense strategy. Overseas presence promotes regional stability by serving as a visible manifestation of U.S. commitment to protecting its interests in the region. It deters aggression and coercion against countries that host U.S.

forces, as hostile states that might contemplate using or threatening force against the host nation recognize that doing so will likely involve them in a military confrontation with not just the host nation, but also the world's preeminent military power. U.S. presence in the region also deters aggression and coercion against other countries in the region. Finally, U.S. presence enhances the Department's ability to respond to the full range of crises by ensuring that forces are already in the region to respond immediately to any threats, and reducing the amount of forces which must be transported to the theater in the event of military conflict.

To optimize its overseas presence posture, the Department continually assesses this posture to ensure it effectively and efficiently contributes to achieving U.S. national security objectives. This means defining the right mix of permanently stationed forces, rotationally deployed forces, temporarily deployed forces, and infrastructure, in each region and globally, to conduct the full range of military operations.

## Power Projection

Equally essential to the shaping and responding elements of the strategy is being able to rapidly move, mass, support, and employ U.S. military power to and within distant corners of the globe. This includes the capability to conduct forced entries—the establishment of a military lodgement on foreign territory even without the benefit of access to infrastructure in friendly countries in the region. Effective and efficient global power projection is the key to the flexibility demanded of U.S. forces and ultimately provides national leaders with more options in responding to potential crises and conflicts. Being able to project power allows the United States to shape and respond even when it has no permanent presence or limited infrastructure in a region.

## Enabling Capabilities

Critical to the U.S. military's ability to shape the international security environment and respond to the full spectrum of crises is a host of capabilities and assets that enable the worldwide application of U.S. military power. These critical enablers include quality people, superb leadership, a globally aware intelligence system, comprehensive and secure communications, and strategic mobility.

## MEETING SPECIFIC REQUIREMENTS OF THE STRATEGY

In general, the above capabilities are needed to carry out more than one aspect of the strategy. For example, capabilities that are needed for fighting and winning a major theater war are generally also important to deterrence (both in crisis and on a day-to-day basis), and may be essential to conducting smaller-scale contingency operations as well. In addition, however, both shaping activities and each of the three types of crisis response—deterring aggression and coercion, conducting smaller-scale contingency operations, and fighting and winning major theater wars—have requirements that are specific to that particular activity.

### *Shaping the Security Environment*

Shaping the international security environment involves promoting regional stability, preventing or reducing conflicts and threats, and deterring aggression and coercion on a day-to-day basis. Promoting regional stability and preventing or reducing conflicts and threats require participation in routine alliance activities, military-to-military exchanges, combined training and exercises, defense cooperation, security assistance, and international arms cooperation. Deterring aggression and coercion on a day-to-day basis requires the capabilities needed to respond to the full range of crises, from smaller-scale contingencies to major theater wars. It also requires the maintenance of nuclear forces sufficient to deter any potential adversary from using or threatening to use nuclear, chemical, or biological (NBC) weapons against the United States or its allies, and as a hedge against defeat of U.S. conventional forces in defense of vital interests.

Given that the demand for the employment of U.S. forces continues to be high, while manpower and other resources are limited, the challenge for the Department is to prioritize its peacetime shaping activities to ensure that efforts are concentrated on those that are of greatest importance without sacrificing warfighting capabilities. Those priorities vary by region and situation according to the national security interests involved—be they vital, important, or humanitarian—and by the extent to which the application of DoD resources can significantly advance those interests.

Accordingly, each regional commander in chief (CINC) annually develops a Theater Engagement Plan that links planned engagement activities to prioritized regional objectives. The Theater Engagement Plan is a comprehensive multi-year plan of CINC engagement activities that has been incorporated into the Department's deliberate planning system. The Chairman of the Joint Chiefs of Staff (CJCS) reviews and integrates each theater plan into the global family of theater engagement plans. The CJCS approves this family of plans and then forwards them to the Secretary of Defense for review. This process enhances the Department's effectiveness in prioritizing, from a global perspective, the CINCs' engagement activities and the associated resource requirements and tempo considerations.

### *Deterring Aggression and Coercion in Crisis*

Deterrence in crisis requires the ability to quickly increase the readiness levels of deployable forces, to move forces deployed in the area closer to the crisis, and to rapidly deploy forces from the United States to the crisis region. It also requires the ability to perform demonstrative actions such as sanctions enforcement or limited strikes. Although all of these capabilities are also required for smaller-scale contingency operations or major theater wars, since most crises will occur prior to full wartime mobilization, the capability to conduct them at peacetime mobilization levels must exist as well.

### *Conducting Smaller-Scale Contingency Operations*

Many capabilities required for smaller-scale contingency operations are similar or identical to those required for fighting and winning major theater wars. Some capabilities, such as those required for noncombatant evacuation operations, peacekeeping operations, humanitarian relief operations, and counterdrug operations, however, are specific to smaller-scale contingencies. Because of the range and unpredictability of smaller-scale contingencies, U.S. forces must be multimission capable, and must be trained, equipped, and managed with multiple mission responsibilities in mind. Finally, U.S. forces must be capable of withdrawing from smaller-scale contingency operations, reconstituting, and then deploying to a major theater war within required timelines. Although in some cases this may pose significant operational, diplomatic, and political challenges, the ability to transition between SSC operations and warfighting remains a fundamental requirement for virtually every U.S. military unit.

Over time, sustained commitment to multiple concurrent smaller-scale contingencies will certainly stress U.S. forces—for example, by creating tempo and budgetary strains on selected units—in ways that must be carefully managed. SSC operations also put a premium on the ability of the U.S. military to work effectively with other U.S. government agencies, nongovernmental organizations, and a variety of coalition partners. SSC operations require that the U.S. government, including DoD and other agencies, continuously and deliberately reassess both the challenges encountered in such operations and the capabilities required to meet these challenges.

### Fighting and Winning Major Theater Wars

The most demanding military requirement on U.S. forces is the capability to fight and win two major theater wars in overlapping time frames. This requires that U.S. forces have a full spectrum of military capabilities in quantities sufficient to defeat any two regional adversaries in full-scale warfare involving land, sea, and aerospace forces in two separate and distant theaters of conflict, with only a short period of time separating the beginnings of the two conflicts.

Major theater war presents the United States with three additional challenges. First is the ability to rapidly defeat the offensives of both adversaries well short of their objectives. Maintaining this capability is critical to the United States' ability to seize the initiative in both theaters and to minimize the amount of territory to be regained from enemy forces. Failure to rapidly defeat an enemy offensive can make the subsequent campaign to evict enemy forces from captured territory much more difficult, lengthy, and costly. It could also weaken coalition support, undermine U.S. credibility, and increase the risk of conflict elsewhere. By the same token, a force that is clearly capable of defeating aggression promptly will serve as a robust deterrent by denying would-be aggressors the prospect of success. Thus, the Department must ensure that the appropriate forces and infrastructure are ready and available to project power sufficient to rapidly defeat enemy forces in the early stages of a major conflict.

A second challenge is the threat or use of chemical and biological weapons, a likely condition of future warfare, especially in the early stages of war for purposes of disrupting U.S. operations and logistics. These weapons may be delivered by ballistic missiles, cruise missiles, aircraft, special operations forces, or other means. This requires that U.S. forces continue to improve their capabilities to locate and destroy such weapons, preferably before such weapons can be used, and to defend against and manage the consequences if these weapons are used. Capability enhancements alone are not enough. Equally important is continuing to adapt U.S. doctrine, operational concepts, training, and exercises to take full account of the threat posed by chemical and biological weapons and other likely asymmetric threats. Moreover, given that the United States will most likely conduct future operations in coalition with other countries, the United States must also continue to encourage its friends and allies to train and equip their forces for effective operations in chemical and biological weapons environments.

Finally, U.S. forces will transition to fighting major theater wars from a posture of global engagement—that is, from substantial levels of peacetime shaping activities overseas and potentially from multiple concurrent SSC operations. In the event of one major theater war, the United States would need to be extremely selective in making any additional commitments to either engagement activities or smaller-scale contingency operations. The United States would likely also choose to begin disengaging from those activities and operations not deemed to involve vital U.S. interests in order to better posture its forces to deter the possible outbreak of a second war. In the event of two such conflicts, U.S. forces would be withdrawn from peacetime engagement activities and SSC operations as quickly as possible to be readied for war. The United States was mindful of this strategy when it undertook Operation Allied Force in Kosovo the spring of 1999, and continually assessed the impact of this operation on the ability of U.S. forces to defend effectively in potential warfighting theaters. Should the United States have faced the challenge of withdrawing forces to mount two major wars in defense of U.S. vital interests elsewhere, the Department is confident that it would have been able to do so, albeit at higher levels of risk. The United States made various adjustments in its posture and plans to mitigate these risks during the Kosovo operation.

The risks associated with disengaging from a range of peacetime activities and operations in order to deploy the appropriate forces to the conflicts can also be mitigated, at least in part, by replacing withdrawing forces with an increased commitment of reserve component forces, coalition or allied forces, host nation capabilities, contractor support, or some combination thereof. Ultimately, the United States must accept a degree of

risk associated with withdrawing from SSCs and engagement activities in order to reduce the greater risk it would incur if the nation failed to respond adequately to major theater wars.

## CAPABILITIES TO RESPOND TO ASYMMETRIC THREATS

To be a truly full-spectrum force, the U.S. military must be able to defeat even the most innovative adversaries. Those who oppose the United States will increasingly rely on unconventional strategies and tactics to offset U.S. superiority in conventional forces. The Department's ability to adapt effectively to adversaries' asymmetric threats—such as information operations; nuclear, biological, or chemical weapons use; ballistic missiles; and terrorism—is critical to maintaining U.S. military preeminence into the 21st century.

### Information Operations

Information operations refers to actions taken to affect adversary information and information systems while protecting one's own information and information systems. The increasing availability of technology and sophistication of potential adversaries demands a commitment to improving the U.S. military's ability to operate in the face of information threats. Defense against hostile information operations will require unprecedented cooperation among Services, defense agencies, other U.S. government agencies, commercial enterprises, and U.S. allies and friends. In addition, the United States' ability to protect information must extend to those elements of the civilian infrastructure that support national security requirements.

### Nuclear, Chemical, and Biological Weapons

The Department has progressed substantially toward fully integrating considerations of nuclear, biological, and/or chemical weapons use against U.S. forces into its military planning, acquisition, intelligence, and international cooperation activities. These include efforts to:

- Embed counterproliferation considerations in all aspects of the planning and programming process.

- Adapt military doctrine and operational plans to deal with NBC weapons in regional contingencies.

- Adjust acquisition programs to ensure that U.S. forces will be adequately trained and equipped to operate effectively in contingencies involving NBC threats.

- Reallocate intelligence resources to provide better information about adversary NBC capabilities and how they are likely to be used

- Undertake multilateral and bilateral cooperative efforts with U.S. allies and friends to develop a common defense response to the military risks posed by NBC proliferation.

The Quadrennial Defense Review underscored the need for these efforts; accordingly, the Secretary of Defense in 1997 increased planned spending on counterproliferation by $1 billion over the Future Years Defense Program.

DoD must meet two key challenges as part of its strategy to ensure future NBC attack preparedness. It must institutionalize counterproliferation as an organizing principle in every facet of military activity, from logistics to maneuver and strike warfare. It must also internationalize those same efforts to ensure U.S. allies and potential coalition partners train, equip, and prepare their forces to operate with U.S. forces under NBC conditions.

To advance the institutionalization of counterproliferation, the Joint Staff and CINCs will develop a joint counter-NBC weapons operational concept that integrates both offensive and defensive measures. This strategy will serve as the basis for refining existing doctrine so that it more fully integrates all aspects of counter-NBC operations. In addition, the Services and CINCs will place greater emphasis on regular individual, unit, joint, and combined training and exercises that incorporate realistic NBC threats. The Services will work to develop new training standards for specialized units, such as logistics and medical units, and larger formations to improve their ability to perform complex tasks under prolonged NBC conditions. Finally, many counterproliferation-related capabilities must be available prior to or very early in a conflict. The Services will develop capability packages that provide for prepositioning or early deployment of NBC and theater missile defense capabilities and personnel into theaters of operations. The timing necessary for the arrival of such capabilities will in part determine whether or not those capabilities reside in active or reserve components.

Unless properly prepared to deal with NBC threats or attacks, allies and friends may present vulnerabilities for a U.S.-led coalition. In particular, potential coalition partners cannot depend on U.S. forces to provide passive and active defense capabilities to counter NBC threats. U.S. counterproliferation cooperation with its

NATO allies through the Senior Defense Group on Proliferation provides a template for improving the preparedness of long-standing allies and other countries that may choose to act in concert with the United States in future military coalitions. Similar efforts with allies in Southwest Asia and Asia-Pacific will continue to ensure that potential coalition partners for major theater wars have effective plans for NBC defense of populations and forces.

Further information on DoD's counterproliferation program can be found in two DoD publications: *Proliferation: Threat and Response* and *Department of Defense Nuclear/Biological/Chemical Defense Annual Report to Congress*. These and other counterproliferation documents are available on the Internet.

### Ballistic Missiles

A growing number of nations are working to acquire ballistic missiles, including missiles that could threaten the territory of the United States. Ballistic missiles can be used to deliver nuclear, chemical, or biological weapons. The increasing availability of sophisticated technology today may enable a nation to develop or acquire, with very little warning time for the United States, an intercontinental range ballistic missile capability. To protect against this growing threat and deter possible adversaries from considering such attacks on American territory, the United States is engaged in a vigorous effort to develop a national missile defense (NMD) system and will determine in 2000 whether to deploy such a system by 2005. The NMD system under development would defend all 50 states against a limited strategic ballistic missile attack such as could be posed by a rogue state. An NMD system could also provide some inherent capability against a small accidental or unauthorized launch of strategic ballistic missiles from existing nuclear capable states.

### Terrorism

The terrorist threat has changed markedly in recent years due primarily to five factors: changing terrorist motivations; the proliferation of technologies of mass destruction; increased access to information and information technologies; a perception that the United States is not willing to accept casualties; and the accelerated centralization of vital components of the national infrastructure. As a result of these constantly changing threats, the United States must continue to improve its

ability to stay ahead of terrorists' ever-expanding capabilities.

DoD's program for combating terrorism has four components: antiterrorism, counterterrorism, terrorism consequence management, and intelligence support. Antiterrorism consists of defensive measures used to reduce the vulnerability of individuals, forces, and property to terrorist acts. Counterterrorism consists of offensive measures taken to prevent, deter, and respond to terrorism. Terrorism consequence management consists of measures to mitigate the effects of a terrorist incident, including the use of a weapon of mass destruction. Intelligence support consists of the collection, analysis, and dissemination of all-source intelligence on terrorist groups and activities to protect, deter, preempt, or counter the terrorist threat to U.S. personnel, forces, critical infrastructures, and interests.

Five key DoD initiatives support its antiterrorism efforts. First, the Joint Staff Integrated Vulnerability Assessment Teams and CINC and Service Vulnerability Assessment Teams provide commanders with critical assistance to force protection programs. Second, DoD continues to improve its Antiterrorism Force Protection Training Program. This program provides antiterrorism awareness training to all DoD military and civilian personnel and their families, specialized training for Antiterrorism Force Protection Officers, pre-command training for prospective commanders, and operational level seminars for senior officers. Third, the Combating Terrorism Readiness Initiative Fund provides an important means for combatant commanders to fund time-critical, emergent requirements that cannot wait for the normal budget or acquisition processes. Fourth, DoD has embarked on a major effort to provide minimum force protection standards for military construction projects. Finally, technology continues to be important in enhancing DoD's ability to counter terrorism. Key technology enablers include threat analysis and warning, explosive device detection, and early detection of weapons of mass destruction.

In the area of counterterrorism, U.S. armed forces possess a tailored range of options to respond to terrorism directed at U.S. citizens, interests, and property, both domestically and overseas. DoD can employ the full range of military capabilities, including rapid-response Special Operations Forces that are specifically trained, manned, and equipped to pre-empt or resolve incidents of international terrorism. DoD also continues to refine its capabilities which have been intensively exercised with interagency counterparts.

In the area of terrorism consequence management, DoD continues to work hard to deter, and when necessary, minimize the effects of a weapons of mass destruction incident. DoD has created, and is continually refining, an excellent response capability. For example, in October 1999, the United States Joint Forces Command established Joint Task Force Civil Support to assume overall responsibility for coordinating DoD's consequence management support efforts to civil authorities for weapons of mass destruction incidents within the United States, its territories, and possessions. See Chapter 7 for further information on consequence management.

In the area of intelligence support, DoD recognizes the importance of timely dissemination of terrorist threat information from the Intelligence Community to the operators in the field. DoD continues to strive toward its goal of having fully coordinated joint operations and intelligence fusion cells at all levels. DoD intelligence organizations remain engaged in an aggressive, long-term collection and analytic effort designed to provide information that can better alert local commanders to potential terrorist attacks. Close working relationships with other members of the national Intelligence Community are being strengthened, and intelligence exchanges with U.S. allies have been increased.

## CONCLUSION

The United States must size, shape, and manage its forces effectively if they are to be capable of meeting the fundamental challenge of the defense strategy—maintaining the near-term capabilities required to support the shape and respond elements of the strategy while simultaneously undergoing the transformation required to shape and respond in the future. For shaping, this means that DoD must continue its efforts to support regional security objectives efficiently and within resource constraints. For responding, it means that U.S. forces must be capable of operating across the spectrum of conflict—meeting the particular challenges posed by smaller-scale contingency operations and major theater wars—and in the face of asymmetric threats. The forces and force policies needed to fulfill the missions described here are detailed in Part II.

BLANK   PAGES

# Chapter 3

# EMPLOYING U.S. FORCES TO IMPLEMENT THE DEFENSE STRATEGY

The defense strategy places a broad range of demands on U.S. military forces—shaping and responding to most near-term demands, while at the same time preparing for an uncertain future. Meeting the military requirements of the strategy requires ready, robust, flexible military capabilities that draw on the combined strengths of the Services, active and reserve, and support agencies. The U.S. armed forces can only meet the demands of the strategy by seamlessly integrating Army, Navy, Air Force, and Marine Corps capabilities across the spectrum of operations from peacetime to wartime. Nothing short of fully joint armed forces—forces that are joint institutionally, organizationally, intellectually, and technically—will ensure the effective and successful execution of the defense strategy.

## THE UNIFIED COMBATANT COMMANDS

The National Security Act of 1947 established unified combatant commands, military commands that have broad continuing missions and are composed of forces from at least two military departments. The 1999 Unified Command Plan recognizes nine unified combatant commands, each led by a four-star general or admiral known as a CINC, or commander in chief. Four of these commands are geographic commands with a specific set of missions and a geographic area of responsibility (AOR). Four combatant commands do not have geographic areas of responsibility, but rather have worldwide functional areas of responsibility. One combatant command has both functional and geographic responsibilities. The Services provide forces to the CINCs. The CINCs, drawing on guidance from the President and the Secretary of Defense, determine how those forces are used on a day-to-day basis.

For virtually every region in the world (the Russian Federation, Canada, Mexico, the 48 contiguous states, and Antarctica are exceptions), there is a unified combatant command, led by a CINC. The command's primary purposes are to use the forces assigned and apportioned to that command, as well as rotationally and temporarily deployed forces, to shape the environment, respond to the full spectrum of crises, and prepare for the future in that region. The geographic CINCs are responsible for planning and conducting all military operations including military engagement activities within their theaters of operation and serving as the single point of contact for all military matters within their area of responsibility. In carrying out these duties, the CINCs may receive assistance from other geographic CINCs, as well as from the functional CINCs. Functional CINCs have worldwide responsibility for specialized capabilities

such as transportation, space, and special operations; they provide these high demand resources to geographic CINCs as appropriate.

### United States European Command

The United States European Command (USEUCOM) is responsible for enhancing transatlantic security through support to NATO, promoting regional stability, and advancing U.S. interests in Europe, Africa, and the Middle East. To accomplish this mission, USEUCOM conducts operations and a variety of engagement activities with NATO allies, partner countries, and other friendly nations throughout its AOR. Included among these engagement activities are combined training, military-to-military contacts, security assistance, and other types of defense cooperation. The engagement activities shape the international environment in ways that promote and protect U.S. interests. The operations employ military force to promote and protect those same interests when no other means seem likely to succeed.

The command's area of responsibility includes more than 14 million square miles and 89 countries. It extends from the North Cape of Norway, through the waters of the Baltic and Mediterranean seas, including most of Europe and parts of the Middle East, to the Cape of Good Hope in South Africa. The Commander in Chief of USEUCOM (USCINCEUR) commands five U.S. components: U.S. Army Europe, U.S. Navy Europe, U.S. Air Forces in Europe, Special Operations Command Europe, and Marine Forces Europe. USCINCEUR is also NATO's Supreme Allied Commander Europe.

USEUCOM's most significant 1999 operation was providing forces, through Joint Task Force Noble Anvil, to NATO-led Operation Allied Force in the Federal Republic of Yugoslavia to end violence by Serbian military and paramilitary forces against ethnic Albanians. The success of the campaign allowed over 600,000 Kosovar Albanian refugees to return to Kosovo. To support this repatriation and facilitate a return of stability to the region, Operation Allied Force transitioned to a stabilizing force in Kosovo, supported from Albania and the Former Yugoslav Republic of Macedonia. In addition, USEUCOM committed over 1,100 personnel to support humanitarian efforts in Albania. After constructing a refugee camp (Camp Hope) capable of accommodating 20,000 refugees, Joint Task Force Shining Hope turned over day-to-day camp administration to civilian humanitarian agencies. In spite of the

demands of Operation Allied Force, USEUCOM continued to provide forces to the NATO-led Stabilization Force in Bosnia through Operation Joint Forge; enforced a no-fly zone over the northern part of Iraq with Operation Northern Watch; and in Operation Avid Response, supported relief efforts following the earthquake in Turkey.

In 1999, USEUCOM conducted more than 3,000 shaping activities throughout the AOR. Virtually all of the many large and small exercises conducted by USEUCOM have shaping aspects; some of them, particularly the combined exercises, have engagement as their primary purpose. U.S. unilateral and NATO exercises hone the ability to fight at a state-of-the-art level alone or with U.S. traditional allies, and they significantly increase the impact of U.S. presence. Special Operations Command Europe conducts combined education and training events in Europe, the Middle East, North Africa, and Sub-Saharan Africa. Under the auspices of the Joint Contact Team Program, multi-Service military contact teams from USEUCOM live and work in partner countries across Central Europe and the New Independent States, coordinating USEUCOM efforts to encourage democratization, military professionalism, and closer relationships with NATO. The George C. Marshall Center for Security Studies promotes peace through understanding by offering a complex of five programs to assist members of Central and Eastern European defense establishments in learning about the challenges of maintaining professional militaries under democratic, civilian control. Similarly, the African Center for Strategic Studies will provide a forum for senior African military and civilian leaders to discuss issues of common concern such as transnational security threats, human rights, refugees, UN operations, and disaster management. These and other engagement activities provide immediate benefits by improving interoperability among U.S. forces and their allied and partner colleagues, and build and strengthen political-military relationships between the United States and countries in the USEUCOM AOR over the long term.

### United States Pacific Command

The United States Pacific Command's (USPACOM's) area of responsibility extends from the west coast of the United States mainland to the east coast of Africa, and from the Arctic Ocean to Antarctica, including Alaska and Hawaii. Geographically, USPACOM is the largest of the U.S. unified commands. USPACOM's AOR covers about 50 percent of the earth's surface or more than 100 million square miles, including 43 countries, 10

U.S. territories, and 20 territories of other countries that together make up nearly 60 percent of the world's population. The Commander in Chief of USPACOM (USCINCPAC) commands a total force of about 301,000 military—nearly 24 percent of all active duty U.S. military forces—drawn from all the Services, organized into a headquarters and four component commands: U.S. Army Pacific, U.S. Pacific Fleet, U.S. Marine Forces Pacific, and U.S. Pacific Air Forces.

The most significant 1999 USPACOM operations were providing forces to the NATO-led Operation Allied Force in the Federal Republic of Yugoslavia and the multinational Australian-led Operation Stabilise in the East Timor region. To end the violence against ethnic Albanians by Serbian military/paramilitary forces and against East Timor refugees by Indonesian military forces, USPACOM deployed forces to support the return of stability to the regions and to ensure the repatriation of displaced civilians.

Throughout 1999, USPACOM forces also conducted a diverse set of exercises, operations, and training activities to shape the environment in the Asia-Pacific region. These activities included participating in numerous military training exercises with partner nations to promote regional stability. Exercise Foal Eagle, in Korea, provides division-level field training during a simulated Korean conflict. Exercise Cobra Gold, in Thailand, strengthens Thai/U.S. defense capabilities and enhances interoperability. In Australia, Exercise Crocodile was the first in a series of bilateral exercises designed to enhance the planning and conduct of joint/combined operations between Australia and the United States. In promoting regional stability, USPACOM forces also participate in military-to-military exchange programs and provide other assistance to partner nations including security assistance, seminars, and special programs such as the Asia-Pacific Chiefs of Defense Conference.

USPACOM conducts counterdrug operations through Joint Interagency Task Force-West, focusing on interdicting drug flow in the eastern Pacific and Southeast Asia. USPACOM also provides forces to Joint Task Force-Full Accounting, a standing Joint Task Force working with representatives from Vietnam, Laos, and Cambodia charged with conducting investigations and remains recovery operations to provide the fullest possible accounting of American citizens still missing as a result of war in Southeast Asia. Finally, USPACOM provides educational and military exchange opportunities through courses at the Asia-Pacific Center for Security Studies and the Center for Excellence in Disaster Management and Humanitarian Assistance, both located in Hawaii.

## United States Central Command

The United States Central Command's (USCENTCOM's) area of responsibility includes 25 countries of diverse political, economic, cultural, and geographic makeup in the Middle East, including the Persian Gulf, Central Asia, Southwest Asia, and Northeast Africa. USCENTCOM's AOR is larger than the continental United States, stretching some 3,100 miles east to west and 3,600 miles north to south. The Commander in Chief of USCENTCOM commands five component commands: U.S. Army Forces Central Command, U.S. Air Forces Central Command, U.S. Naval Forces Central Command, U.S. Marine Forces Central Command, and Special Operations Command Central.

Although continued tensions with Iraq are the major focus for USCENTCOM, this unified command has a broader mission that includes supporting U.S. interests in the region, promoting regional security in cooperation with regional allies and friends, and projecting U.S. military force into the region if necessary. USCENTCOM shapes the regional security environment using a variety of initiatives and activities, including combined training, military-to-military contacts, educational opportunities, and security assistance. USCENTCOM conducts joint combined exercise training with nations in the region which helps develop interoperability and reinforces military-to-military relationships between the United States and host nations. USCENTCOM also coordinates placements for over 2,500 students from countries across the region in a variety of U.S. military courses, schools, and colleges.

In 1999, USCENTCOM continued to enforce United Nations Security Council Resolutions 687, 688, and 949 through ongoing Maritime Intercept Operations (MIO) and Operation Southern Watch. Since the beginning of Operation Desert Shield, MIO have boarded over 12,300 ships, checking for contraband headed to or from Iraq. Approximately 700 ships have been diverted for violations. The participation of the United Kingdom, Belgium, Canada, Australia, New Zealand, Kuwait, and other coalition nations continues to demonstrate resolve for Iraqi compliance with applicable United Nations resolutions.

Operation Southern Watch, executed by Joint Task Force-Southwest Asia (JTF-SWA) continues to maintain the southern No Fly Zone and No Enhancement Zone. The effect is to limit Saddam Hussein's ability to project military power into the southern third of Iraq, from where he could threaten Kuwait and Saudi Arabia. Since its inception, the men and women of JTF-SWA have flown over 225,000 sorties.

Operation Desert Spring (formerly exercise Intrinsic Action) also shows the United States' commitment to the physical security of Kuwait. This operation, conducted year round in Kuwait, focuses on battalion and brigade task force operations and training.

USCENTCOM has responded to ongoing changes in the regional military, political, and economic environment by articulating and implementing a theater strategy based on a policy of collective engagement with the nations in its AOR. This strategy has begun a shift away from a primarily Gulf-centered focus to one that is more regionally balanced. This approach has produced a broader integration and application of resources and assets, and yielded greater flexibility in addressing the command's mission to defend U.S. interests throughout the region. The implementation of the strategy is based on the belief that an ounce of proactive engagement prevention is better than a pound of warfighting cure. The Theater Engagement Plan integrates a wide array of activities focused on the development of professional regional militaries responsive to civil authority, the enhancement of regional security partners' ability to assist in their own defense, and the formation and maintenance of a coalition that is organized to provide collective security in order to ensure stability in the region. The Cooperative Defense Initiative against weapons of mass destruction, begun with the Gulf Cooperation Council States, Egypt, and Jordan, is but one major initiative that offers high potential for fostering peace and stability in this volatile region.

### United States Southern Command

The United States Southern Command's (USSOUTH-COM's) area of responsibility encompasses 32 countries and covers more than 12 million square miles. The region stretches 6,000 miles north to south from the southern coast of the United States to Tierra del Fuego at the tip of South America (exclusive of Mexico). The command's headquarters is located in Miami, Florida. Its component commands are the U.S. Army South, U.S. Atlantic Fleet, U.S. Air Force South, and U.S.

Marine Corps South. USSOUTHCOM also has a sub-unified command, Special Operations Command South, as well as responsibility for Joint Interagency Task Force-East, Joint Task Force Bravo in Honduras, the Caribbean Regional Operations Center, and joint expeditionary deployments throughout the region under Exercise New Horizons.

In 1999, much of USSOUTHCOM's attention was focused on the final withdrawal of all U.S. military forces from the Republic of Panama. In accordance with the Panama Canal Treaties of 1977, all U.S. military forces had departed Panama by noon on December 31, 1999. The departure from Panama resulted in a significant restructuring of the command's theater engagement strategy, with Puerto Rico becoming the main operational hub for USSOUTHCOM operations in the AOR.

In the wake of Hurricanes Mitch and Georges, USSOUTHCOM more than doubled in size the already successful New Horizons program of engineering and medical readiness training exercises to meet the increased need for humanitarian assistance operations in Central America and the Caribbean. The expanded New Horizons programs in the Dominican Republic, El Salvador, Guatemala, Honduras, and Nicaragua involved more than 23,000 guard and reserve personnel.

Throughout 1999, the command also continued traditional military engagement programs that promoted its regional engagement strategy. The wide array of engagement tools included combined operations, exercises, and training and education; military-to-military contact programs; security assistance programs; and humanitarian assistance programs. USSOUTHCOM conducted over 2,000 deployments, involving more than 50,000 personnel, in 1999.

Counterdrug activities form an important part of the United States Southern Command's shaping mission and include exercises with host nations, information sharing, and various efforts to halt the flow of illegal drugs both at the source of production and in the transit zone. Joint Interagency Task Force-East is responsible for coordinating the Department's support to the U.S. counterdrug effort in the USSOUTHCOM AOR. Examples of some of the successful counterdrug operations include Operations Central Skies and Caper Focus in which coordinated efforts by DoD assets, U.S. Coast Guard, Customs, and Drug Enforcement Agency assets, plus host nation forces resulted in significant disruption of illegal drug movements in the eastern Pacific, Caribbean, and Central America transit zone regions.

Finally, USSOUTHCOM's implementation of its theater strategy contributed to the peaceful end of a century-old conflict between Peru and Ecuador. It also contributed to the military's subordination to civilian authority in Honduras.

## United States Joint Forces Command

Redesignated on October 1, 1999, from United States Atlantic Command, the United States Joint Forces Command (USJFCOM) is headquartered at Norfolk, Virginia. USJFCOM is unique among the unified commands because it has both functional and geographic responsibilities. In addition to geographic responsibility for the Atlantic Ocean theater (which encompasses the Atlantic Ocean, except for waters adjoining Central and South America, as well as Iceland, the Azores, and portions of the Arctic Ocean), USJFCOM's functional responsibilities of training, integrating, and providing joint, combat ready forces for other CINCs give the command its main focus. The recent redesignation emphasizes the role of the commander in chief of USJFCOM (USCINCJFCOM) as the chief advocate for jointness and the importance placed on enhancing the levels of jointness and interoperability throughout the Department. USCINCJFCOM's new and increased functional responsibilities reflect his key role in the transformation of U.S. forces to meet the security challenges of the 21st century.

Key responsibilities include:

- Serving as the lead joint force integrator responsible for combining Service and defense agency capabilities to enhance interoperability and joint and combined capabilities by recommending changes in doctrine, organizations, training and education, materiel, leader development, and personnel.

- Serving as the DoD Executive Agent and functionally responsible to the Chairman of the Joint Chiefs of Staff (CJCS) for joint warfighting experimentation.

- Serving as the lead agent for joint force training responsible to the Chairman for managing the CINCs' portion of the CJCS exercise program, conducting and assessing joint and multinational training and exercises for assigned forces, and assisting the Chairman, other CINCs, and Service Chiefs in their preparations for joint and combined operations.

- Serving as the joint force provider of assigned U.S.-based forces responsible for deploying trained and ready joint forces and providing them in response to requirements of other combatant commands when directed by the National Command Authority.

- Providing, within the United States, its territories, and possessions, military assistance to civil authorities (including consequence management operations in response to nuclear, chemical, radiological, or biological weapons of mass destruction incidents), military support to U.S. civil authorities, and military assistance for civil disturbances, subject to Secretary of Defense approval.

- Planning for the land defense of the continental United States, domestic support operations to assist government agencies, and the binational Canada-United States land and maritime defense of the Canada-U.S. region.

## United States Special Operations Command

The Commander in Chief of the United States Special Operations Command (USSOCOM) commands over 46,000 active and reserve special operations forces (SOF) personnel organized into four component commands: Air Force Special Operations Command, U.S. Army Special Operations Command, Naval Special Warfare Command, and Joint Special Operations Command. USSOCOM's global mission is to support the geographic CINCs, ambassadors and their country teams, and other government agencies by preparing SOF to successfully conduct special operations, including civil affairs and psychological operations, in support of the full range of military operations.

The Commander in Chief of USSOCOM (USCINCSOC) has two roles. In his capacity as a supporting CINC, he provides trained and ready SOF to the geographic CINCs. In his role as a supported CINC, USCINCSOC must be prepared to exercise command of selected special operations missions when directed by the National Command Authority.

Congress directed the establishment of USSOCOM in 1987 to correct serious deficiencies in the ability of the United States to conduct special operations activities. The command was assigned many service-like responsibilities, including developing SOF doctrine, training assigned forces, validating requirements, ensuring combat readiness, monitoring the promotions and professional development of SOF personnel, and monitoring the preparedness of SOF assigned to other CINCs. To

29

carry out these responsibilities, USCINCSOC was given the authority to direct and control a separate Major Force Program (MFP), MFP-11, which ensures the SOF program and budget have visibility at the Department of Defense and with Congress. USCINC-SOC was also granted the authority to function as a head of agency to develop and acquire SOF-peculiar equipment, materiel, supplies, and services. Taken together, these two authorities provide USSOCOM great flexibility in organizing, training, and equipping the nation's SOF for employment by the geographic CINCs. He is the only CINC with program and budget authority.

USSOCOM's mission can be effectively accomplished only with the support of the Army, Navy, and Air Force who provide quality personnel, common equipment, base operations support, logistical sustainment, and core skills training. This support allows USCINCSOC to focus on SOF-specific training and equipment, as well as the integration of SOF into the entire range of military operations.

### United States Space Command

American military satellite systems—used for communications, navigation, weather, surveillance, and ballistic missile attack warning information—are under the control of United States Space Command (USSPACE-COM). These systems provide essential information to geographic CINCs, supporting their ability to employ U.S. forces to respond to crises worldwide by ensuring the United States has the access and ability to operate in space while denying enemies the capability to do the same.

In 1999, USSPACECOM operated satellites that provided critical information to U.S. forces in Bosnia, the Persian Gulf, and Kosovo. For example, during Operation Allied Force, the use of Global Positioning System-guided munitions allowed theater commanders to conduct all-weather operations, a key force multiplier in NATO's success.

### United States Strategic Command

The United States Strategic Command (USSTRAT-COM) oversees the strategic nuclear force structure in support of U.S. deterrence policy, and is prepared to employ these weapons should deterrence fail. In so doing, USSTRATCOM strengthens America's deterrent posture and reduces the potential for aggression against its allies and friends. The Commander in Chief of USSTRATCOM (CINCSTRAT) works with the Offices of the Secretaries of Defense and Energy to ensure a safe and reliable nuclear stockpile in a no-testing environment. USSTRATCOM also supports the geographic CINCs in shaping their environment through theater counterproliferation planning and intelligence collection and exploitation efforts. Finally, USSTRATCOM provides strategic planning expertise to other government agencies as they develop U.S. arms control positions.

### United States Transportation Command

The United States Transportation Command (US-TRANSCOM) is the sole manager of America's global defense transportation system and is responsible for coordinating personnel and strategic transportation assets necessary to project and sustain U.S. forces. USTRANSCOM supports military operations worldwide, from exercises to humanitarian assistance to peacekeeping to deterrence in crises and combat operations.

Through three component commands—Air Mobility Command, Military Sealift Command, and Military Traffic Management Command—USTRANSCOM supports the national defense strategy. In 1999, USTRANSCOM provided airlift, aerial refueling, sealift, and land transportation to deploy joint forces to crises, exercises, and other peacetime engagement activities critical to the U.S. military's shaping and responding missions worldwide. USTRANSCOM's component commands delivered personnel, food, medical supplies, and heavy equipment to humanitarian relief operations in Central America, Turkey, and elsewhere. All components deployed active and reserve forces to Southern Europe in support of Operation Allied Force. The Air Mobility Command rapidly deployed combat and support forces; Military Sealift Command activated and procured sealift to deploy munitions and heavy equipment; and Military Traffic Management Command coordinated surface transportation and operated ports throughout the United States and Europe.

## OTHER COMMANDS

In addition to the nine unified combatant commands, there are also subunified commands and combined commands that play an important role in the U.S. defense strategy. Two of these commands, U.S. Forces Korea and North American Aerospace Defense Command, are particularly unique and warrant further discussion.

## U.S. Forces Korea

U.S. Forces Korea (USFK), a subordinate unified command of USPACOM, is the joint headquarters through which American combat forces would be sent to the Combined Forces Command (CFC), the binational command that has operational control over more than 600,000 active duty military personnel from both the United States and South Korea. In the event of an attack from North Korea, the CFC would provide a coordinated defense of South Korea through its fighting components—the Combined Ground, Air, Naval, Marine Forces, and Special Operations Component Commands. Commander USFK, a four-star U.S. Army general, is also the Commander in Chief, Combined Forces Command, with a four-star Republic of Korea (ROK) Army general serving as the deputy. Additionally, Commander USFK serves as the Commander in Chief United Nations Command and visibly represents the will of the UN Security Council to secure peace on the Korean Peninsula.

Joint and combined training exercises are a major tool to shape the international environment on the Korean Peninsula. These exercises demonstrate U.S. and ROK warfighting capabilities, enhance interoperability between these forces, and deter aggression from North Korea. In 1999, USFK's participation in Exercises RSOI (Reception, Staging, Onward Movement, and Integration) and Ulchi Focus Lens demonstrated the United States' ability and commitment to move substantial forces onto the Korean Peninsula in the event a renewed regional conflict erupted into war. These sophisticated exercises plus robust modernization efforts by USFK forces provide tangible evidence of U.S. resolve for peace and stability on the Korean Peninsula.

## North American Aerospace Defense Command

The North American Aerospace Defense Command (NORAD) is a binational combined command that includes Canadian and U.S. forces. This command is responsible for aerospace warning and control for North America. The Commander in Chief of NORAD (CINCNORAD) also currently serves as Commander in Chief, United States Space Command. In accordance with the binational NORAD agreement, CINCNORAD is responsible through the Canadian Chief of the Defense Staff and the U.S. Chairman of the Joint Chiefs of Staff to the Canadian and U.S. National Command Authorities. Finally, U.S. Element NORAD is responsible for employing U.S. aerospace forces unilaterally to defend the continental United States, Alaska, and other areas as directed. NORAD's command and control center is located in Cheyenne Mountain, Colorado, an underground base that is the central collection facility for a worldwide system of sensors designed to provide the CINC, the President, and the Prime Minister of Canada with an accurate picture of any aerospace threat.

By providing early warning of a potential aerospace attack, NORAD helps deter aggression against North America on a daily basis, a critical shaping mission. By providing early warning of an attack, NORAD also enables the United States Strategic Command to effectively respond if necessary.

## CONCLUSION

The commanders in chief ensure that U.S. military forces actively shape the international environment and respond as needed to a full range of crises, from noncombatant evacuations to major theater wars. Through the CINCs, the United States conducts peacetime engagement activities with nations around the world—building stronger military relationships with allies and friends in the process. These commands also conduct operations around the world, from peace enforcement operations in Bosnia, to humanitarian relief operations throughout Africa, to counterdrug operations in South America and the Caribbean. Working as a team with the geographic commands, the functional commands provide essential support for almost every one of these operations.

BLANK   PAGE

# Chapter 4

# READINESS

The continuing dangers of today's international security environment demand that the United States have the best-trained, best-equipped, and best-prepared military forces in the world. Recruiting, retaining, equipping, and training these forces to be ready for the nation's wars is the number one priority of the Department of Defense. The Department's plan for the FY 2001 budget continues with initiatives established in 1999 to increase pay, retirement, and other benefits and emphasizes other important short- and long-term initiatives to ensure robust military readiness well into the 21st century.

## AMERICA'S FORCE IS READY

The U.S. armed forces remain the most capable in the world and have demonstrated their readiness in meeting America's many security obligations around the globe. In 1999, U.S. armed forces successfully responded to numerous, worldwide contingency operations ranging from the ongoing mission of Operations Northern and Southern Watch patrolling the no-fly zones over Iraq to Operation Allied Force in the Balkans. In addition, there have been continuing peacekeeping and peace enforcement operations in locations like Bosnia (Operation Joint Forge), new operations in Kosovo (Operation Shining Hope), and operations that are drawing down, as in Haiti (Operation Uphold Democracy). Simultaneously, the nation's armed forces have effectively maintained a forward presence around the world, in such places as Europe and the Pacific Rim. In carrying out this range of missions, from small-scale contingencies, such as peacekeeping, to larger-scale operations, the Services have consistently demonstrated their versatility and unmatched capability. Today's military is ready to and capable of executing the National Military Strategy.

While the readiness of the armed forces is much higher than during the late 1970s and early 1980s, signs of stress (apparent in readiness indicators and informal field reports) have accompanied the Department's success. Challenges in recruiting and retaining quality people, keeping equipment readiness high, and managing a high operating tempo (OPTEMPO) have led to some readiness concerns and downward trends.

Working together, the Department of Defense and Congress have taken aggressive steps to reverse these trends and keep the U.S. military the best in the world. The positive effects of the FY 1999 and FY 2000 budget funding increases, which focused on readiness, are

beginning to show in the field. As part of a continuing strong five-year plan, the FY 2001 budget calls for aggressive programs to further enhance the Department's short- and long-term readiness.

## READINESS CHALLENGES

Readiness is the foundation of U.S. military credibility as an instrument of national power. The need to maintain well-trained, combat-ready forces is clear and remains unchanged. Although the Department's plans will significantly improve readiness, reversing today's downward trends will be neither quick nor easy. Meeting the Department's readiness goals in today's dynamic security environment will continue to present challenges.

### Challenge: Personnel Readiness

U.S. forces are the best in the world primarily because of the quality of the people. Increasing threats to U.S. security and emerging technology make quality service members indispensable. While the Department is still attracting the best and brightest, the nation's strong economy poses a challenge in recruiting and retaining such personnel. In 1999, both the Army and Air Force fell short of their recruiting goals. Although the Navy and Marine Corps attained their goals, the cost in both dollars and effort was greater than it has been in the past. Recruiting shortfalls over time will adversely impact the readiness of the Services by limiting the ability to properly man squads and crews.

To maintain a skilled, capable force, the Services must also retain their key mid-career and senior leaders. Through careful management, retention problems have not significantly affected readiness, but shortages in certain skills and specialties, such as pilots, machinists, and information technology specialists, merit increased attention.

With strong support from Congress, the Department is addressing these concerns and actively working to make military compensation more competitive with the private sector. The FY 2000 Defense Authorization Act provided for a 4.8 percent raise in base pay, restoration of the 50 percent of base pay retirement, and needed changes in pay tables. By increasing pay and improving the military retirement system, the Department is demonstrating its resolve to improve the lives of military personnel and ensure that a military career remains attractive. The Department also added $100 million for increased recruiting and advertising campaigns.

Along with adequate compensation, the Department seeks to ensure service members are not driven from military service by excessive unit deployments. Deployments are a part of military life. The number and frequency of deployments, however, are increasing at a time when the size and permanent forward presence of the armed forces has declined. While this increased tempo has affected all of the Services, it is especially troublesome in the Air Force and Army, and remains a significant concern. Responding to more frequent contingencies is particularly challenging for certain specialized assets that are constantly in demand but possessed in only limited numbers, such as airborne reconnaissance platforms. More frequent deployments are causing military members to spend even more time away from home station and placing greater stress on both the individual and the family. Increasing deployments can also place a greater strain on those personnel who remain at home station because their workload increases to cover ongoing duties normally performed by the deployed personnel. These commitments can stress unit training and morale. Unit commanders must carefully balance military training requirements with the stability necessary for the long-term health of military families.

The Department, as required by Section 923 of the National Defense Authorization Act for Fiscal Year 2000, is working to establish definitions, standards, and data collection methods that will provide detailed reporting and help to address these challenges. The current Service policies and methodologies for the management of personnel tempo (PERSTEMPO) and deployment tempo (DEPTEMPO) are discussed below.

#### ARMY

The Army currently defines PERSTEMPO as the rate of deployment for Army units measured as a percentage. These deployments include operational taskings as well as training deployments. Personnel tempo consists of two components. The first component, deployment tempo, is the percent of time spent on out-of-station operational deployments by a unit, expressed in terms of days. The second component, skill tempo, is the percent of time spent on out-of-station operational deployments by a particular individual military occupational skill and skill level, expressed in terms of days. Army policy requires all units to report DEPTEMPO. If a unit reaches a DEPTEMPO of 120 days, the Chief of Staff of the

Army places the unit on a watch list for additional management attention. In addition to the watch list, Army personnel policy directs commanders to provide for a period of stabilization for soldiers following a temporary duty (TDY) or temporary change of station (TCS). To the extent feasible, when soldiers are placed on TDY/TCS for a period of at least 30 consecutive days, they will be provided a period of stabilization equal to one month at home for each month deployed.

The Army measures OPTEMPO as a resource gauge to indicate the amount of miles or operating hours required to execute a unit commanders training strategy to achieve a given specific readiness level.

## NAVY

In the Navy, PERSTEMPO is defined as time away from homeport tracked at the unit level versus the individual. A unit away from homeport for 56 days consecutively is considered deployed. A unit's total days out of homeport during the reporting period divided by the total number of days in the reporting period yields personnel tempo. The Navy uses three guidelines in managing personnel tempo: a maximum deployment of six months, port to port; a minimum turn-around ratio of 2 to 1 between deployments; and a minimum of 50 percent time in homeport for a unit over a five-year cycle. The Chief of Naval Operations (CNO) personally approves personnel tempo exceptions to these guidelines. Units away from homeport more then 55 percent of the time for a given three-year period are placed on the CNO's watch list for close monitoring.

The Navy uses an OPTEMPO measure to address fuels budgeting. Operating tempo is measured in steaming days, flying hours, or more generally equipment usage time. Days in port do not count against operating tempo.

## MARINE CORPS

The Marine Corps tracks PERSTEMPO at the unit level versus the individual. The Marines use the term DEPTEMPO in lieu of PERSTEMPO. DEPTEMPO is defined as the percentage of time in a given annual period that a unit, or element of the unit, supports operations or training away from its home base or station for a period of 10 consecutive days or greater. DEPTEMPO rates are calculated using the unit deployment data entered into the Marine Corps Training and Exercises Employment Plan. These data capture past, present, and projected DEPTEMPO for each Marine Corps unit.

The Marine Corps defines OPTEMPO as the amount of resources expended over a period of time that are devoted to operations and training. Operating tempo is tracked in terms of equipment expenditures (flight hours flown, tank track hours/mile, vehicle miles driven, etc.).

## AIR FORCE

The Air Force measures PERSTEMPO as the number of days an individual is away from home. The Air Force considers a day away as any day that a deployed person is not able to sleep in their own home, for any reason. Personnel tempo is tracked for individuals by social security number in a database maintained at the Air Force Personnel Center. When an individual departs home station, his or her unit's orderly room is responsible for updating the Personnel Concepts III personnel data system to reflect the individual's off-station duty status. Once the individual files his or her travel voucher through the Defense Finance and Accounting System, the measured time away from home is cross-checked and validated. Currently, the Air Force desired maximum for PERSTEMPO is that no individual be TDY more than 120 days in any 12-month period. In the past, the Air Force used the term operating tempo to measure equipment activity rates for planning and budgeting purposes. Operating tempo is generally measured in terms of total flying hours or flying hours per crew per month.

**Global Military Force Policy.** In addition to the individual Service tempo management policies, the Department currently uses the Global Military Force Policy to establish peacetime prioritization guidelines for Low Density/High Demand (LD/HD) units. LD/HD assets are force elements consisting of major platforms, weapons systems, units, and/or personnel that possess unique mission capabilities and are in continual high demand to support worldwide joint military operations. These assets, such as the EA-6B, Rivet Joint, and the U-2, warrant careful management attention to ensure reasonable PERSTEMPO and asset allocation. The Global Military Force Policy was designed to assist senior leaders in developing options for allocating these assets in crises, contingencies, and long-term joint task force operations.

## Challenge: Training the Forces

The Department is fully committed to ensuring that U.S. forces have the highest quality education and training,

tailored to current and emerging requirements and delivered cost-effectively, whenever and wherever they are required.

Curriculum developers and managers throughout the Department continue to design and conduct teaching and learning activities that cost-effectively meet resident education and training requirements of their target student populations. Service training commands are increasing their investments in advanced learning technologies to better facilitate the ways in which they provide individual military education and training. In addition, the standard output of the institutional training base will soon be measured as part of the DoD readiness reporting system, to ensure that active and reserve component units are supplied with qualified individuals.

Unit training is paramount in building force readiness. During unit training, individuals and teams complete essential training required for combat proficiency. The military departments continue to pursue unit training programs that place greater emphasis on achieving interoperability between Services and that extend unit-training opportunities to the Total Force. The Department has also made improvements in how unit training will be captured in DoD readiness reporting.

The process of ensuring that units from different Services can work together effectively is called joint training. Through the Joint Training System, the Chairman of the Joint Chiefs of Staff ensures that joint training requirements are being met. This system shapes the way the armed forces train for future military operations, with special emphasis on training the capabilities required to achieve the Chairman's *Joint Vision 2010*.

The Department is using advanced modeling and simulation technology to enable it to conduct less expensive, more realistic, and more frequent joint command and control training. The Joint Simulation System (JSIMS), currently in development, will support training at all levels and across all phases of operations in the Department. It provides a distributed training environment to accommodate live, virtual, and constructive simulations for use by units and staffs, joint forces, commander in chief staffs, and Service and interagency personnel in the full range of missions. JSIMS will connect audiences worldwide to allow them to train without having to deploy from home stations. JSIMS will also enhance the exploration and evaluation of new operational concepts and will support joint force experimentation.

As mission diversity increases, the ability to maintain forces at the highest levels of readiness in all mission areas becomes increasingly challenging. Embedded training, the ability to train to accomplish specific missions on or at the warfighting station, ensures that warfighters (or peacekeepers) are fully prepared for the immediate mission. The ability to carry training capacity to forward locations will optimize and sustain readiness throughout the mission. The Department is also pursuing use of commercially available information technology and networks to support on-the-job performance aiding.

The continuing advancements in weapons and sensor technology are placing greater demands for increased training space. Existing training space, however, is being subject to greater commercial and cultural pressures to limit use. Traditional live-training ranges, in the face of these competing demands, must use existing range space more effectively. The increased flexibility of modern instrumentation will enable electronic linkages of training areas and worldwide applications of instrumented live training. Instrumentation will allow DoD to substitute modeling and simulation and/or threat emulators for costly live opposing forces and will increase the depth, breadth, affordability, and flexibility of the live-training environment. Instrumentation will also maximize the efficiency of reduced live-training budgets. Increasing emphasis on common and interconnected instrumentation systems will facilitate interoperability training at the unit level.

DoD's innovative approaches to education and training are a key factor in maintaining the readiness of U.S. armed forces. The Department will use advanced information technologies to create an integrated global network of knowledge resources in support of training policies and programs. In particular, DoD will take advantage of key advances in learning and communications technologies to overcome obstacles that have precluded widespread application of learning technologies in the past. DoD is working diligently to implement technology-based learning across the Department on a broad range of platforms that is reusable for a number of applications and that can be delivered over a network, anywhere and anytime needed. Key to this effort is collaboration with the private sector to create open architecture guidelines and standards for distributed learning. The use of learning technologies will improve readiness and make education and training programs more cost-effective. Under the auspices of the Advanced Distributed Learning initiative, the Office of the Secretary of Defense, working with the Services,

prepared and delivered to Congress a strategic plan for developing and applying learning technologies across the Department on a broad scale. The Department's implementation plan, currently under development, will provide an integrated view of specific plans, programs, and budgets for each Service. These initiatives and plans are designed to achieve DoD's goal of making U.S. forces ready by ensuring that they have access to the highest quality education, training, and performance aids that can be tailored to their needs and delivered cost effectively anytime and anywhere.

### Challenge: Materiel Readiness

The Department faces a number of challenges in keeping its equipment ready for the next mission. Aging systems, spot spare parts shortages, and high OP-TEMPO are placing increased pressure on the materiel readiness of the force. Of particular concern are negative readiness trends in mission capable rates for aircraft. Lack of experience among maintainers has caused improvements in mission capable rates to lag. Ground equipment condition is somewhat better, but the long-term capability to sustain this equipment is increasingly difficult because of the effects of equipment wear, excessive age, and the rising cost of spare parts. These factors increase maintenance costs, the total number of spare parts required, and the number of personnel needed to perform the maintenance.

The Department has taken aggressive action to address these materiel readiness concerns, to include providing additional funding over the last two years for spare parts and depot level repairs. The Air Force will continue to recruit additional maintenance technicians to improve aircraft mission capable rates. In addition, the Department released over $1.8 billion in Kosovo emergency supplemental funding to meet the most urgent requirements. The Department also increased its investment in new procurement to $60 billion per year to replace aging equipment, thereby reducing maintenance costs. The prepositioned equipment sets of both the Army and the Marine Corps are in good condition and improving. The Army prepositioned equipment for maneuver battalions is 86 percent filled, and the Marine Corps is continuing its strong replenishment and maintenance programs on its prepositioned squadrons with over 99 percent filled. Air Force bare base asset sets are in constant demand for contingency operations; funding for these assets was added in the FY 2000 budget to maintain their readiness.

### Challenge: Readiness Reporting

In response to legislation and DoD internal review, the Department undertook an extensive and collaborative process to enhance the current readiness reporting system. Throughout this process, one simple calculus applied: make readiness reporting more objective, timely, and accurate. The Department's new reporting system will provide commanders, leaders, and Congress the best possible information with which to assess readiness and ensure that U.S. forces remain the best trained and equipped in the world. The new system will enhance unit readiness reporting, as well as capture the readiness of the Department's institutional training establishments and installations.

### Challenge: Medical Readiness

Medical readiness, the Military Health System's primary focus, encompasses protecting and sustaining the health of the force, medical operations in small-scale contingency operations, and medical support of the Department's role in domestic preparedness against weapons of mass destruction. Significant progress has been made in designing a joint health strategy for the 21st century and in implementing efforts to protect the health of the force. DoD developed the Joint Health Service Support Vision 2010-Full Spectrum Health, which supports *Joint Vision 2010* and will become the conceptual framework for developing and providing health services to support the warfighting mission into the 21st century.

The Department continues the implementation of its force health protection (FHP) strategy for sustaining and preserving the health of the force as part of the larger Force Protection Program. With the ongoing operations in the Balkans and Southwest Asia, the Department and Services are focusing on improvements in medical record keeping, disease and non-battle injury surveillance, pre- and post-deployment health assessments, and environmental surveillance. Service members receive briefings and training on how to remain healthy and safe while performing their mission under potentially hazardous environmental, chemical, and biological warfare conditions. The complementary tools of immunization—to meet biologic threats posed by the environment or the enemy, and protective clothing and other gear for protection from harmful agents—remain critical elements of force health protection. In addition, the Department established policy for the Services to specifically address the prevention of combat and operational stress in order to enhance service members'

readiness and combat effectiveness as well as to protect their physical and mental health.

The FHP strategy leverages technology to better monitor and protect the health of deployed forces. The Department's medical research efforts exploit biotechnology to develop better vaccines and more sensitive detection measures for chemical, biological, and environmental hazards. Information technology forms the linchpin of the Department's efforts to capture and analyze health and readiness information regarding service members, especially during deployments. The Department is conducting a proof-of-concept test for a medical Personal Information Carrier, an electronic medical dog tag, that will document important health and exposure information for all deployed personnel. Ongoing development of the Theater Medical Information Program continues. Once operational, it will provide deployed medical units with the information tools to capture and document inpatient and outpatient medical encounters and to conduct health surveillance.

The Department's commitment to protecting the health of the men and women in uniform continues when they leave military service. The Secretary joined with the Secretaries of Veterans Affairs and Health and Human Services to charter the Military and Veterans Health Coordinating Board. The Board provides a structure for FHP collaborations and coordination to address health issues of military members and veterans. The Department also established Deployment Health Centers with clinical, surveillance, and research capabilities that will identify trends in the health of deployed service members. It will work, in conjunction with a similar Department of Veterans Affairs effort, to respond with appropriate clinical care, research, and health communication.

During 1999, the Anthrax Vaccine Immunization Program (AVIP) was a major focus of the Department. In March 1998, the Secretary approved the AVIP implementation plan for Southwest Asia due to increasing concerns about biological threats in the region. Subsequently, the Secretary approved implementation of the AVIP for the Total Force on May 18, 1998, with vaccine administration beginning in August 1998. As of August 1999, over 323,000 service personnel have received approximately 1.05 million doses of anthrax vaccine. Eventually, the Total Force of approximately 2.4 million personnel, including the more than one million members of the National Guard and Reserves, will receive the Food and Drug Administration licensed anthrax vaccine. Unique concerns related to this program have surfaced within the reserve community and an aggressive communication/education plan designed to address these issues is underway. The Department has multiple initiatives that continue to support the anthrax vaccine program, including an outstanding immunization tracking system, civilian review of reports of vaccine adverse events, and a responsive health communication program.

Small-scale contingency operations and the Department's role in support of the consequence management aspect of domestic preparedness carry responsibilities for military medicine. Operations dedicated to humanitarian assistance, disaster relief, and peacekeeping frequently include or are solely supported by military medical personnel. These operations help to build international coalitions and promote U.S. interests, as well as providing training experiences for medical personnel. With domestic preparedness, the Assistant Secretary of Defense for Health Affairs works in close collaboration with other federal agencies to plan for and test a variety of possible medical responses, in the event of a national disaster or an attack with weapons of mass destruction. See Chapter 7, Managing the Consequences of Domestic Weapons of Mass Destruction Incidents, for further information. Medical readiness is an important facet of personnel readiness and is a core quality of life issue. Accessible and quality medical care for active duty members, retirees, and eligible dependents directly affects the Department's ability to attract and retain the quality men and women required to sustain the all-volunteer force.

## CONCLUSION

The Department's soldiers, sailors, airmen, and Marines continue to do a remarkable job managing the changes of the past decade. The Department's initiatives, with strong congressional support, are addressing the hard issues and contributing to improved force readiness. The positive effects of the FY 1999 and FY 2000 budget funding increases are beginning to show in the field. The resources budgeted and programmed over the FY 2000 to 2005 time frame will continue to fuel aggressive programs to further enhance the Departments short- and long-term readiness. These efforts will set the stage for future readiness and ensure the United States will continue to have the best-trained, best-equipped, best-led force in the world.

# Chapter 5

# CONVENTIONAL FORCES

Conventional forces provide the bulk of the nation's military power. Consisting of four elements—land, naval, aviation, and mobility—these forces execute the full range of military missions, with the exception of special operations and nuclear deterrence. As such, they play a crucial role in carrying out the defense strategy, which focuses on shaping the international environment and responding to a broad variety of crises. Toward this end, conventional forces conduct forward presence missions, engage in a range of smaller-scale contingencies, and conduct combat operations up to and including major theater wars.

The FY 2001 President's Budget and associated Future Years Defense Program (FYDP) provide resources to sustain and modernize the nation's forces in both the near and far terms. This chapter describes the capabilities required for executing conventional force missions and the investments vital to maintaining and enhancing those capabilities.

The United States routinely deploys forces abroad to support its international interests. Historically, forward deployments of troops have been concentrated in three regions:

- Pacific – One Army mechanized division, one Marine expeditionary force, 2.2 Air Force fighter wing-equivalents, one Navy carrier battle group, and one amphibious ready group with an embarked Marine expeditionary unit. Additionally, forward-based forces in the Pacific region include one light infantry division in Hawaii and 1.25 fighter wing-equivalents in Alaska.

- Europe – The major elements of one Army armored and one Army mechanized infantry division, 2.3 Air Force fighter wing-equivalents, one carrier battle group, and one amphibious ready group with an embarked Marine expeditionary unit.

- Southwest Asia – One Army heavy battalion task force and one attack helicopter battalion, one Air Force fighter wing-equivalent, one carrier battle group, and one amphibious ready group with an embarked Marine expeditionary unit.

As needs arise elsewhere, all four Services periodically deploy forces to forward locations. These deployments involve both active and reserve component units, with prepositioned U.S. equipment and material contributing substantially to overseas presence.

## THREATS

As potential regional aggressors expand their technological capabilities and modify their doctrine, they will pose more lethal threats to military operations. The proliferation of modern defense technologies means that U.S. forces must maintain a substantial advantage over potential adversaries to ensure quick and decisive victory with minimum casualties. U.S. forces simultaneously must be prepared to operate in the face of asymmetric threats, such as the use of nuclear, biological, and chemical (NBC) weapons, terrorism, and information warfare.

### Aviation Threats

Near-term threats remain below levels that would put U.S. air superiority at significant risk in a regional conflict. Aerial engagements conducted in the Balkans in 1999 as part of Operation Allied Force corroborate that assessment. On the other hand, potential adversaries are projected to field significant numbers of improved surface-to-air systems that could restrict the rapid application of U.S. air power against key ground targets at the outset of a war. As shown during the 1999 operations against Serbian air defenses, even older air defense systems, adroitly employed, can limit the application of air power.

While the chief current regional adversaries—Iraq and North Korea—have done little in recent years to augment their capabilities against U.S. air forces, they—or other possible future adversaries—may be able to exploit a wide range of advanced air-to-air and surface-to-air technologies and systems available on the international market. Aviation systems and weaponry currently being offered for sale include fighter aircraft, air-to-air missiles, and air defense systems. Properly employed, these systems could pose a difficult challenge to U.S. forces in combat. The further proliferation of advanced weapon systems could drive up U.S. losses in a future conflict, making continued improvements in the nation's military capability imperative.

Given the current U.S. preeminence in air combat capability, potential adversaries are likely to emphasize ground-based air defenses and the hardening and camouflage of ground targets. Several rogue states are making serious efforts to move important military and industrial facilities underground. The secrecy surrounding these projects compounds the difficulty of planning the neutralization of such targets in wartime.

Enemy use of decoy targets also can work effectively to dilute or confuse air attacks if not countered by the adoption of sophisticated information-gathering and targeting systems. Finally, the use of unconventional approaches, such as the dispersal of troops or weapons in densely populated urban areas, can limit the application of strike systems like missiles and air-delivered bombs. Such decoys and troop dispersal tactics were widely employed against NATO forces during Operation Allied Force. While quite effective in limiting enemy losses, these measures also constrained the movement and deployment of enemy forces. Once enemy ground units massed in the open, where they lacked effective air cover, they became vulnerable to air attack.

The lessons of Operation Allied Force concerning potential threat capabilities are particularly important in comparison with the experience of the Gulf War and the continuing air patrols being flown over Iraq in support of Operations Northern Watch and Southern Watch. Serbian exploitation of ground terrain and foliage cover, combined with the use of decoys, points to the need for continued improvements in several aspects of future air attack operations, with emphasis on intelligence, surveillance, and reconnaissance (ISR) assets and integration.

### Maritime Threats

Advanced antiship cruise missiles (ASCMs) represent an expanding threat to U.S. naval forces, particularly in littoral environments. These weapons can be launched from missile boats, coastal batteries, and air platforms. Newer generations of supersonic, highly maneuverable, low-flying, low-observable ASCMs are expected to enter world markets in large quantities within the next two decades. As a result, U.S. naval forces can expect to face increasing challenges in dealing with these sophisticated missiles in the years ahead.

Another continuing concern is the proliferation of advanced submarine technology to countries that might try to restrict access to international waters. The production of nonnuclear submarines is a growth industry worldwide, with the most advanced technologies flowing freely to countries with adequate resources to procure them. Potential adversaries such as Iran, operating a handful of advanced diesel submarines in the complex acoustic environment of the littorals, could severely impede the conduct of maritime operations in a future conflict. While the number of submarines maintained by Russia has declined over the past decade, the quality

of its remaining ships is high. In addition, China, which operates the third largest number of submarines in the world, has been actively modernizing its fleet.

Naval mines pose an asymmetric threat of increasing concern to maritime forces. The employment of these weapons in a regional conflict could delay, or even prevent, the execution of U.S. maritime missions. Mine systems are generally inexpensive, easy to store and conceal, and are rapidly deployable. They range in type and capability from primitive moored contact mines to sophisticated bottom mines, which are difficult to detect and counter and are triggered by acoustic and/or magnetic signatures of passing ships. Most littoral nations possess at least a rudimentary mine capability, raising the possibility of a mine threat in any contingency.

### Ground Threats

The threat of coercion and large-scale, cross-border aggression by hostile states with significant military power continues to pose a danger to the vital interests of the United States, its allies, and regional security partners. Several highly capable weapon systems are available and affordable to regimes that are unstable or hostile to U.S. interests. Examples include lightweight antiaircraft and antitank missiles, tactical ballistic missiles with improved guidance and payload technologies, modern battle tanks with day-and-night optics, passive defense systems capable of interfering with precision-guided munitions, active defense systems that redirect or destroy incoming projectiles, advanced antitank guided missiles capable of top attacks against tank turrets, and advanced artillery munitions.

Increasingly capable and violent terrorist groups, drug cartels, and international crime organizations directly threaten the lives of American citizens and undermine U.S. policies and alliances. Although irregular forces will be unable to match the combat power of heavy U.S. weaponry, they could still pose difficult challenges to U.S. forces. The proliferation of modern light arms, a fighting style that could necessitate operations in dense urban environments, and the ability of indigenous forces to conceal themselves within civil populations could negate some of the advantages of U.S. heavy weaponry.

### Nuclear, Biological, and Chemical Weapons

The threat of hostile nations or terrorists using NBC weapons against U.S. military or civilian targets, or against U.S. friends and allies, has been growing. More than 20 countries currently possess or are developing NBC weapons and the means to deliver them. This makes the deployment of defenses, particularly against chemical and biological weapons, increasingly important. Toward that end, the Department has doubled its expenditures on chemical and biological defense programs over the past five years, and now commits approximately $1 billion annually to such initiatives. Details on these programs are provided in Chapters 2, 4, 7, and 9.

## FORCE STRUCTURE

Key elements of the conventional force structure are shown in Table 2.

| Conventional Force Structure Summary, FY 2001 | Table 2 |
|---|---|
| **Army** | |
| Active Corps | 4 |
| Divisions (Active/National Guard) | 10/8 |
| Active Armored Cavalry Regiments | 2 |
| Enhanced Separate Brigades (National Guard) | 15 |
| Separate Brigades (National Guard) | 3 |
| **Navy** | |
| Aircraft Carriers | 12 |
| Air Wings (Active/Reserve) | 10/1 |
| Amphibious Ready Groups | 12 |
| Attack Submarines | 55 |
| Surface Combatants (Active/Reserve) | 108/8 |
| **Air Force** | |
| Active Fighter Wings | 12+ |
| Reserve Fighter Wings | 7+ |
| Reserve Air Defense Squadrons | 4 |
| Bombers (Total Inventory)[a] | 190 |
| **Marine Corps** | |
| Marine Expeditionary Forces | 3 |
| Divisions (Active/Reserve) | 3/1 |
| Air Wings (Active/Reserve) | 3/1 |
| Force Service Support Groups (Active/Reserve) | 3/1 |
| [a] Reflects the planned reduction of 18 B-52 aircraft. | |

## Aviation Forces

Aviation forces of the Air Force, Navy, and Marine Corps—composed of fighter/attack, conventional bomber, and specialized support aircraft—provide a versatile striking force capable of rapid employment worldwide. These forces can quickly gain and sustain air superiority over regional aggressors, permitting rapid air attacks on enemy targets while providing security to exploit the air for logistics, command and control, intelligence, and other functions. Fighter/attack aircraft, operating from both land bases and aircraft carriers, combat enemy fighters and attack ground and ship targets. Conventional bombers provide an intercontinental capability to strike surface targets on short notice. The specialized aircraft supporting conventional operations perform functions such as surveillance, airborne warning and control, air battle management, suppression of enemy air defenses, reconnaissance, and combat search and rescue. In addition to these forces, the U.S. military operates a variety of transport planes, aerial-refueling aircraft, helicopters, and other support aircraft. Descriptions of those systems are provided in the sections on mobility and land forces.

The important role played by aviation forces in regional contingencies was underscored in Operation Allied Force. More than 700 U.S. aircraft, plus another 300 aircraft contributed by the NATO allies, took part in the operation. Fighter and bomber forces conducted missions against fixed and mobile targets in the province of Kosovo and against Yugoslavia itself. Strike aircraft received extensive support from a variety of other aircraft, including tankers, electronic warfare systems, and ISR forces. The airlift and tanker fleets provided for the rapid deployment of personnel and materiel to the theater.

### FIGHTER/ATTACK AIRCRAFT

The Air Force, Navy, and Marine Corps keep a portion of their tactical air forces forward deployed at all times. These forces can be augmented, as needs arise, with U.S.-based aircraft.

The Air Force is capable of deploying, as part of its expeditionary forces, seven to eight fighter wing-equivalents (FWEs) to a distant theater in a matter of days as an initial response in a major theater war. Additional wings would follow within the first month. These forces would operate from local bases where infrastructure exists and political agreements allow. Navy and Marine Corps air wings similarly can be employed in distant contingencies on very short notice; these forces provide a unique ability to carry out combat operations independent of access to regional land bases.

During FY 2001, the aviation combat force structure will include 20.2 Air Force FWEs (72 aircraft each), 11 Navy carrier air wings (48 fighter/attack aircraft each), and four Marine air wings (which are task organized and include varying numbers and types of aircraft). Tables 3, 4, and 5 show the programmed composition of Air Force, Navy, and Marine Corps air wings at the end of FY 2001.

The Air Force will complete its transition to an expeditionary deployment concept during FY 2001. In October 1999, the Air Force began to recast its operational deployment planning for the majority of its nonnuclear forces. Under this new approach, fighter/attack aircraft and selected additional force elements are being grouped into 10 Aerospace Expeditionary Force (AEF) packages for deployment planning purposes. The goal is to enhance the predictability of deployments and to improve the quality of life for Air Force personnel by minimizing unexpected contingency deployments. Each AEF unit will be prepared to deploy for a 90-day period on a fixed, 15-month cycle. Although a given unit may not actually be called on to deploy, it will remain ready to move on short notice throughout its designated period of availability.

Through the expeditionary concept, the Air Force will be able to substantially improve the way it packages forces for deployment. This gain will be realized without corresponding changes in force levels or force structure. No new command structure will be created. Unit identities, basing locations, and readiness levels will remain as before. While there may be some adaptations in training sequences, such adjustments will be identified and refined as the concept is put into practice and evaluated.

**Table 3**

### Composition of Air Force Wings, FY 2001
### (Fighter/Attack Aircraft)

| Aircraft Type | Mission | Active FWEs | Reserve FWEs | Total FWEs |
|---|---|---|---|---|
| F-15A/B/C/D | Air superiority | 3.4 | 0.6 | 4.0 |
| F-15E | Multirole[a] | 1.8 | 0 | 1.8 |
| F-16A/B | Multirole[b] | 0 | 0.4 | 0.4 |
| F-16C/D | Multirole[b] | 5.8 | 5.2 | 11.0 |
| F-117 | Attack | 0.5 | 0 | 0.5 |
| A-10 | Close air support | 1.0 | 1.4 | 2.4 |
| **Total[c]** | | 12.6 | 7.6 | 20.2 |

NOTES: Numbers may not add to totals due to rounding.
FWE quantities are based on the primary mission aircraft inventory (PMAI) in combat units. PMAI denotes aircraft authorized for the performance of units' basic missions; combat PMAI excludes aircraft maintained for other purposes, such as training, testing, attrition replacements, and reconstitution reserves.

[a] Oriented primarily to the air-to-ground role, but also can be used in air-to-air operations.

[b] Can be used in the air-to-air or air-to-ground role.

[c] Excludes OA-10 forward air control aircraft and F-15/16 aircraft devoted to North American air defense missions.

**Table 4**

### Composition of Carrier Air Wings, FY 2001
### (Fighter/Attack Aircraft)

| Wing Type | Aircraft Type (PMAI per Wing) | Number of Air Wings |
|---|---|---|
| Active | F-14 (12), F/A-18 (36)[a] | 10 |
| Reserve | F/A-18 (48)[b] | 1 |

NOTE: PMAI counts include only Navy F-14s and F/A-18s. The Marine Corps will maintain sufficient active F/A-18 squadrons to ensure 36 F/A-18s per deployed carrier air wing. (Actual numbers based on operating tempo requirements of each Service as determined by the Department of the Navy Tactical Aircraft Consolidation Plan.)

[a] Two air wings will maintain a second F-14 squadron in lieu of a third F/A-18 squadron until those squadrons transition to the F/A-18E in 2001 and 2002.

[b] Includes three Naval Reserve squadrons (36 aircraft) and one Marine Corps Reserve squadron (12 aircraft).

**Table 5**

### Composition of Marine Aircraft Wings, FY 2001
### (Fighter/Attack Aircraft)

| Aircraft Type | Mission | Active PMAI (Squadrons) | Reserve PMAI (Squadrons) | Total PMAI (Squadrons) |
|---|---|---|---|---|
| F/A-18A/C | Multirole | 8 | 4 | 12 |
| F/A-18D | Multirole | 6 | 0 | 6 |
| AV-8B | Close air support | 7 | 0 | 7 |
| **Total** | | | | 25 |

43

As noted above, each AEF unit will be made up primarily of fighter/attack and selected support elements. Although airlift, tanker, and low-density/high-demand forces (such as command and control aircraft) have not been designated as AEF components, the Department is evaluating possible future options to limit deployment pressures on these forces. Some steps have already been taken, such as the decision to retain the EC-130E airborne command, control, and communications force in service through FY 2005, rather than retiring it at the end of FY 2003 as previously planned. Measures to limit E-3 Airborne Warning and Control System deployments also are being considered. Other approaches, such as increasing the number of crews assigned, will be employed where practicable and affordable in order to moderate the operating tempo of these forces.

The Air Force is continuing its efforts to improve both near- and long-term force readiness. Funding for depot-level repairable items and initial spares has been increased over previously projected levels for the second straight year in an effort to ensure aircraft availability across the fleet. Funding additions for engine upgrades, modifications, and component improvements—also across the fleet—likewise will improve force availability. Funding for F-16 engine safety-of-flight modifications has been accelerated. Funds have also been added to support F-15 radars, which otherwise would become unsustainable in FY 2002.

The Air Force has been equipping its fleet of F-16 aircraft with targeting pods for precision attack of ground targets and for air defense suppression missions. As a result of the high demand experienced during Operation Allied Force for the capability to deliver precision munitions, additional numbers of these pods will be procured. Many of the targeting pods will be allocated to reserve aircraft, enabling them to deliver precision-guided munitions. These upgrades will also enhance the deployability of reserve forces in contingencies, helping to relieve high operating tempos in the active force.

Finally, there has been a considerable increase in funding for enlistment and reenlistment bonuses. The expanded bonuses will help not only in retaining today's highly trained aviators but also in attracting the highly qualified personnel needed for the future.

The Navy also is taking steps to improve the readiness of its aviation forces. Funding increases for F/A-18C/D maintenance and modifications, as well as expanded procurement of infrared targeting pods, will improve the effectiveness of these aircraft over the remainder of their service lives. Significant improvements are being made in Marine Corps AV-8B support, drawing on the findings of the 1998 Harrier Review Panel study. Boosts in flight-hour funding levels also are expected to reduce fluctuations in readiness as naval aviation forces prepare for deployments.

### CONVENTIONAL BOMBERS

Conventional bombers perform missions spanning the full spectrum of operations. For example, during Operation Allied Force, B-2 bombers played an essential role attacking sensitive targets using precision munitions. The B-1 bomber was also used to attack targets throughout the operation.

In a major theater war, bombers would deliver large quantities of unguided general-purpose bombs and cluster munitions against area targets, such as ground units, airfields, and rail yards. Bomber forces also would play a key role in delivering precision-guided munitions (including cruise missiles) against point targets, such as command and control facilities and air defense sites.

The ability of these forces to have an immediate impact on a conflict by slowing the advance of enemy forces, suppressing enemy air defenses, and inflicting massive damage on an enemy's strategic infrastructure will expand dramatically over the next 10 years as new munitions are deployed. More advanced weapons now entering the inventory or in development will enable bomber forces to bring a wider range of targets under attack, while taking advantage of the bombers' large payloads. The rapid-response, long-range capability provided by bombers could make them the first major U.S. weapon system on the scene in a fast-breaking crisis. For remote inland targets, bombers could be the only weapons platform capable of providing a substantial response.

The bomber inventory currently includes 208 aircraft—94 B-52s, 93 B-1s, and 21 B-2s. The B-52 force is programmed to decline to 76 aircraft in FY 2001. Within the existing inventory, 44 B-52s and 52 B-1s are primary mission aircraft, fully funded in terms of operations and maintenance, load crews, and spare parts, and ready for immediate deployment. An additional 12 B-52s are held ready for nuclear missions. All B-52s and B-1s in the inventory, including those in attrition reserve, will be kept in flyable condition and will receive planned modifications. B-1 primary mission

aircraft will rise to 70 by 2004, when increasingly capable conventional weapons become available. Bombers will be an integral part of the expeditionary air force, with both B-1s and B-52s available for AEF deployments.

## SPECIALIZED AVIATION FORCES

Specialized aviation forces contribute to all phases of military operations. Two of their most important missions are suppression of enemy air defenses and aerial reconnaissance and surveillance. Air defense suppression forces locate and neutralize enemy air defenses. Airborne reconnaissance and surveillance forces provide critical information on enemy air and surface forces and installations. These forces bridge the gap in coverage between ground- and space-based surveillance systems and the targeting systems on combat aircraft. Airborne reconnaissance systems fall into two categories: standoff systems, which operate outside the range of enemy air defenses; and penetrating systems, which operate within enemy air defense range. Table 6 summarizes the force levels programmed for the end of FY 2001.

## AVIATION WEAPONS

The decades-long promise of precision munitions is being realized. U.S. aviation forces can now hit, precisely, any set of coordinates, thus putting at risk any target that can be identified. This places a premium on ISR assets, which provide targeting support for strike operations involving precision munitions. The operational benefits afforded by these munitions include:

- Neutralization or reduction of the effectiveness of enemy antiaircraft systems. This helps reduce aircraft losses and speeds the follow-on use of direct attack weapons, which are less expensive than standoff munitions.

- The ability to attack highly defended targets from the outset of hostilities, without having to sequentially destroy a series of peripheral defenses.

- The extension of the effective reach of combat aircraft, enabling attacks to be launched from positions well beyond enemy air defense range.

| Specialized Aviation Forces, FY 2001 | Table 6 |
|---|---|
| **Electronic Warfare** | |
| EA-6B | 104 |
| EC-130H | 13 |
| **Airborne Reconnaissance and Surveillance Systems** | |
| **Standoff** | |
| E-2C[a] | 61 |
| E-3[a] | 24 |
| E-8[b] | 11 |
| U-2[b,c] | 27 |
| RC-135 S[d]/U[e]/V[c]/W[c] | 16 |
| EP-3[c] | 12 |
| RC-12[c] | 42 |
| **Penetrating[b]** | |
| F-14 (TARPS) | 47 |
| F-16 (TARS) | 24 |
| F/A-18D (ATARS) | 24 |
| RC-7 (ARL) | 7 |
| Pioneer UAV Systems[f] | 4 |
| MAE (Predator) UAV Systems[f] | 10 |
| Tactical UAV Systems[f] | 4 |
| Hunter UAV Systems[f] | 1 |

NOTE: Force counts represent PMAI totals.

[a] Performs airspace surveillance, early warning, and fighter control.

[b] Performs ground reconnaissance.

[c] Conducts signals intelligence.

[d] Conducts measurement and signature intelligence.

[e] Conducts electronic intelligence.

[f] Each UAV system contains three or more air vehicles.

The ability of precision weapons to maximize damage to targets while minimizing collateral damage and increasing aircraft survivability was vividly demonstrated during Operation Allied Force. Precision munitions were employed by U.S. forces in strikes against Serbian air defense installations, infrastructure, and ground forces. Examples of weapons used in the operation include the Joint Direct Attack Munition, the Joint Standoff Weapon, and the Standoff Land Attack Missile.

Inventories of air-to-air munitions also are benefiting from the introduction of upgraded systems. New variants of existing missiles, now in production or under development, incorporate significant improvements in lethality and range, making these weapons more effective across a larger engagement area.

## Naval Forces

The diverse roles played by naval forces in support of the defense strategy drive the forces' overall size and structure. Forward presence requirements and peacetime and crisis response operations, in particular, are major determinants of naval force needs.

The key components of the maritime force structure are aircraft carriers, amphibious ships, attack submarines, surface combatants, mine warfare ships, and ballistic-missile submarines (discussed in the Nuclear Forces chapter). In addition, the force includes maritime patrol aircraft and sea-based helicopters, as well as ships that perform support and logistics functions.

The maritime force will number 316 ships at the end of FY 2001 (see Table 7). Force levels will decline slightly over the remainder of the program period, stabilizing at just over 300 ships. This will provide a sufficient number and mix of vessels to maintain 12 aircraft carrier battle groups (CVBGs), 12 amphibious ready groups (ARGs), 116 surface combatants, 55 attack submarines, and associated logistics and support forces.

| Table 7 Naval Force Levels, FY 2001 | |
|---|---|
| Ballistic Missile Submarines | 18 |
| Aircraft Carriers | 12 |
| Attack Submarines | 55 |
| Surface Combatants | 108/8 |
| Amphibious Ships | 38/2 |
| Mine Warfare Ships | 11/5 |
| Logistics Force Ships/Support Force | 59 |
| **Total Battle Force Ships** | **316** |
| Selected Maritime Aircraft | |
|     Maritime patrol aircraft squadrons | 12/7 |
|     LAMPS helicopter squadrons | 12/1 |
| NOTE: Entries with two numbers separated by a slash give active and reserve force counts. | |

Carrier battle groups typically consist of a carrier, its air wing, surface combatants, attack submarines, and various supporting vessels. Each ARG comprises a large-deck amphibious assault ship, a transport dock ship, a dock landing ship, and an embarked Marine Expeditionary Unit (Special Operations Capable), or MEU(SOC). Until late 1998, the Navy deployed a CVBG and an ARG about 75 and 80 percent of the time, respectively,

in the Mediterranean; about 75 and 50 percent of the time, respectively, in the Indian Ocean; and on a nearly continuous basis in the western Pacific. Since 1999, a CVBG has been deployed in the Southwest Asian region on a continuous basis to support contingency operations. Maintaining a continuous presence in that theater has been accomplished by adjusting CVBG deployments in other regions. Plans call for a CVBG to be deployed continuously in Southwest Asia through FY 2001, thus obviating the need for the Air Force to provide AEFs to fill any gaps in CVBG presence. In the other two theaters, where a CVBG or ARG is not constantly on patrol, one of those forces is located within a few days' transit time of the region and can be dispatched promptly if circumstances require.

### AIRCRAFT CARRIERS

In addition to their extensive forward presence and crisis-response capabilities, aircraft carriers provide a forward base from which to conduct air operations in littoral areas. Operating independent of land-basing restrictions, carriers also provide support facilities for joint operations. Their presence in a conflict theater enables attack, surveillance, air defense, and electronic warfare missions to be conducted against naval, air, and ground targets from points well distant from the shore. The employment of two carriers in Operation Allied Force illustrates the key role that these forces play in influencing and controlling world events.

The FY 2001-2005 program supports an aircraft carrier force structure of 12 fully deployable units. At the end of FY 2001, the carrier force will consist of nine nuclear-powered vessels—eight of the CVN-68 Nimitz class plus the Enterprise (CVN-65)—and three conventionally-powered units. One of these ships, the J. F. Kennedy (CV-67), has been serving as an active as well as a reserve/training asset. The FY 2001 budget redesignates this ship as an active unit, enabling it to be incorporated fully into the carrier deployment schedule.

The newest Nimitz-class aircraft carrier, Ronald Reagan (CVN-76), will join the fleet in FY 2003, replacing the Constellation (CV-64). At that point, two conventionally-powered carriers—Kitty Hawk (CV-63), stationed in Yokosuka, Japan, and the J. F. Kennedy—will remain in the fleet. The Kitty Hawk will be retired in FY 2008, when CVN-77 enters service. The first of the Nimitz-class follow-on ships, designated CVNX, will enter construction in FY 2006 and join the fleet around FY 2013, replacing the Enterprise (CVN-65), which will then have seen more than 50 years of service.

The second CVNX will replace the J. F. Kennedy about five years later, when that carrier is about 50 years old.

### AMPHIBIOUS FORCES

Forward-deployed naval expeditionary forces with embarked Marines provide joint capabilities for forward presence and crisis-response operations. Amphibious forces are typically employed in three-ship ARGs. A vital component of the maritime force structure, ARGs provide the ability to project forces into littoral regions rapidly from points over the horizon, utilizing both air and surface platforms. During Operation Allied Force, Marines from two ARG/MEUs demonstrated the flexibility that amphibious forces bring to bear in contingencies by simultaneously conducting attack missions in support of the air campaign while providing humanitarian assistance and protection for displaced Kosovars.

The FY 2001-2005 program sustains a 12-ARG force capable of supporting three forward-deployed Marine expeditionary units in peacetime and lifting the equivalent of 2.5 Marine expeditionary brigades (MEBs) in wartime. By FY 2005, the amphibious force will consist of 38 active and two reserve ships, including six new San Antonio-class LPD-17 amphibious transport dock ships.

### ATTACK SUBMARINES

The attack submarine (SSN) force plays a vital role in support of maritime operations. The increased emphasis on regional contingencies has shifted the focus of SSN missions from open-ocean antisubmarine warfare (ASW) to surveillance, power projection, support of special operations forces, and ASW in littoral environments. SSNs are uniquely suited to littoral operations by virtue of their ability to gather surveillance data, perform crisis response missions, conduct strike operations, and protect carrier battle groups and amphibious forces in forward areas.

The Department completed an assessment of SSN mission and force structure needs in late 1999. The assessment concluded that at least 55 SSNs are needed to ensure the capability to respond to urgent missions of high national interest. Based on that finding, the FY 2001 budget retains 55 attack submarines and the FY 2001-2005 FYDP provides the resources needed to sustain a fully capable submarine force.

### SURFACE COMBATANTS

Surface combatants provide multimission capabilities for operations in littoral environments. The surface combatant force comprises modern cruisers and destroyers equipped with standoff strike weapons, anti-air missiles, guns, and ASW torpedoes, as well as older frigates and destroyers with some of these capabilities. Surface combatants protect carrier battle groups and ARGs, and sustain a presence in areas where full battle groups may not be available. They also provide naval surface fire support, long-range strike capability (using Tomahawk cruise missiles), and integrated theater air defense capabilities.

The FY 2001-2005 program maintains a surface combatant force of 116 ships, including 108 ships in the active inventory and eight in the reserves. A decision has been made to decommission six Spruance-class destroyers in 2001 in favor of retaining an equal number of Oliver Hazard Perry-class frigates (FFGs). Because of their inherent utility for littoral missions and relatively low operating costs, FFGs are increasingly relied upon for employment in regional engagements and military exercises with other nations.

### COMBAT LOGISTICS FORCE

The combat logistics force provides extensive at-sea replenishment for ships deployed in forward areas. The force includes station ships, which support in-theater operations, and shuttle ships, which ferry material continuously from shore to sea. In FY 2001, the station-ship force will consist of four AOE-1-class and four AOE-6-class fast combat support ships. The shuttle-ship force will be composed of a civilian-manned Military Sealift Command (MSC) fleet of 13 oilers (T-AO), six dry stores ships (T-AFS), and seven ammunition ships (T-AE). The first Advanced Dry Cargo Ships (T-ADC(X)) will enter the force in FY 2005. These new MSC-manned multiproduct ships will replace aging T-AE and T-AFS vessels. When teamed with a T-AO, the T-ADC(X) will provide dry-cargo capability equivalent to that of an AOE-1-class vessel.

### MARITIME PATROL AIRCRAFT

Maritime patrol aircraft (MPA) conduct antisubmarine, antiship, and other surveillance missions, as well as mining operations, in support of task groups at sea and forces ashore. At the end of FY 2001, the MPA force will comprise 228 P-3C aircraft, organized into 12 active and seven reserve squadrons. The FY 2001-2005 program continues the transition of this land-based force from open-ocean to littoral operations.

### LIGHT AIRBORNE MULTIPURPOSE SYSTEM

Light Airborne Multipurpose System (LAMPS) MK III SH-60B helicopters, operating from surface warships, provide extensive antiship and antisubmarine capabilities for maritime engagements. LAMPS helicopters are used for deploying torpedoes, sonobuoys, and antiship missiles; processing magnetic anomaly detector information; and conducting reconnaissance missions. At the end of FY 2001, there will be 147 SH-60B aircraft in the inventory. During that year, three SH-60Bs will be transferred to a reserve squadron, where they will replace less capable SH-2G systems.

## Land Forces

The diverse and complementary mix of capabilities provided by the Army and Marine Corps gives military commanders a wide range of options for conducting ground missions. The Army provides forces for sustained combat operations on land, as well as for power projection and forcible-entry operations. The Marine Corps, as an integral part of the nation's naval forces, provides expeditionary forces capable of projecting combat power ashore and conducting forcible-entry operations in support of naval campaigns or as part of joint task forces. Operationally, a joint force commander employs land forces in close coordination with aviation and naval forces.

### ARMY

The Army will maintain four active corps headquarters, 10 active divisions (six heavy and four light), and two active armored cavalry regiments throughout the program period. Light forces—airborne, air assault, and light infantry divisions—are tailored for forcible-entry operations and for operations on restricted terrain, like mountains, jungles, and urban areas. Heavy forces—armored and mechanized divisions equipped with Abrams tanks, Bradley fighting vehicles, Apache attack helicopters, and the Paladin field artillery system—are trained and equipped for operations against armies employing modern tanks and armored fighting vehicles. Light and heavy forces can operate independently or in combination, providing the mix of combat power needed for specific contingencies.

The Army is developing plans for both the near and far term to field more mobile and lethal forces. The Army's plans call for the immediate creation of new, more responsive brigades that will initially use surrogate equipment and loaned vehicles. Off-the-shelf medium

armored vehicles will then be procured to extend this capability in the interim until technology allows for the fielding of a new family of combat vehicles. The long-term goal is to erase the distinction between traditional heavy and light forces, thereby creating a standard force (termed the Objective Force) for the entire Army that is both more responsive and more capable.

Implementation of redesigned heavy Army divisions has resulted in the following changes: one less combat company per combat battalion, a dedicated reconnaissance troop assigned to each brigade, a shift of organic combat service support assets from combat battalions to forward support battalions, and an increased emphasis on command, control, and information support structures. The Total Army Analysis for FY 2003 and FY 2005 identified adjustments to the support needed to sustain Army combat forces across the range of military operations. As a result, the Army is taking steps to convert lower-priority support and combat units to higher-priority support units. Pending the completion of the Total Army Analysis FY 2007, the Army will continue to work with its reserve components (including representatives of the Adjutants General) to refine options for reconfiguring appropriate reserve units so that they mirror active units and maintain their relevancy to national needs.

| Table 8 |
| Army Force Structure and End-Strength, FY 2001 | |
| --- | --- |
| **Active Component** | |
| Divisions | 10 |
| Separate brigades and armored cavalry regiments | 2 |
| End-strength | 480,000 |
| **Army National Guard** | |
| Divisions | 8 |
| Separate brigades and armored cavalry regiments[a] | 18 |
| End-strength | 350,000 |
| **Army Reserve End-Strength[b]** | 205,000 |
| [a] Fifteen will be enhanced separate brigades. | |
| [b] Includes all functional areas of combat, combat support, and combat service support. | |

In FY 2001, the Army National Guard is authorized 350,000 soldiers, organized into 15 enhanced separate brigades, eight combat divisions, three separate brigades, and various support units for divisions, corps, and theaters. The Army Reserve is authorized 205,000

soldiers, assigned primarily to combat support and combat service support units. Table 8 summarizes the Army force structure programmed for the end of FY 2001.

### MARINE CORPS

Marine units are employed as part of Marine Air-Ground Task Forces (MAGTFs) consisting of four elements: command, ground combat, aviation combat, and combat service support. A Marine expeditionary force (MEF) is the largest MAGTF organized for combat, comprising one or more divisions, aircraft wings, and force service support groups. The Marine Corps maintains three MEFs in the active force, headquartered in California (I MEF), North Carolina (II MEF), and Okinawa (III MEF). Embarked on amphibious ships, MEU(SOC)s (consisting of about 2,000 Marines each) are task-organized and forward deployed continuously in or near regions of vital U.S. interest. These forces provide a swift and effective means of responding to fast-breaking crises and can remain on station for indefinite periods of time, ready to intervene or take action if needed. Over the past several years, the Marine Corps has closely integrated its reserve force with the active component, providing specific units to augment and reinforce active capabilities.

| Table 9 Marine Corps Force Structure and End-Strength, FY 2001 | |
|---|---|
| **Active Component** | |
| Divisions | 3 |
| Wings | 3 |
| Force service support groups | 3 |
| End-strength | 172,600 |
| **Reserve Component** | |
| Division | 1 |
| Wing | 1 |
| Force service support group | 1 |
| End-strength | 39,500 |

In addition to these general purpose forces, the Marine Corps has formed and employed a significant special capability in its Chemical/Biological Incident Response Force (CBIRF). The CBIRF is designed to provide a rapid initial response to chemical/biological incidents.

Table 9 summarizes the Marine Corps force structure programmed for the end of FY 2001.

### Mobility Forces

Mobility forces—airlift, sealift, and land- and sea-based prepositioning—move military personnel and materiel to and from operating locations worldwide. These forces include transport aircraft, cargo ships, and ground transportation systems operated by the Defense Department and commercial carriers. By relying on commercial resources to augment military mobility systems, the Department maximizes the efficiency with which it can deploy and support forces abroad, while avoiding the prohibitive cost of maintaining military systems that duplicate capabilities readily attainable from the civil sector.

Airlift aircraft provide for the rapid deployment of troops and materiel to overseas operating locations. Sometimes employed in conjunction with prepositioning, airlift delivers the forces needed in the critical early days of a combat operation. DoD has established an intertheater airlift objective of about 50 million ton-miles per day (MTM/D) of cargo capacity. Of that amount, about 20 MTM/D is provided by commercial aircraft, which contribute to military missions as participants in the Civil Reserve Air Fleet (CRAF). The remaining 30 MTM/D of intertheater airlift capacity is provided by military aircraft, which are designed to perform missions that cannot be flown by commercial planes. The Department will have an organic strategic airlift capacity of 27 MTM/D at the end of FY 2001.

Sealift contributes primarily to the movement of combat equipment and other cargoes, delivering the majority of the materiel needed to sustain deployed forces over time. DoD will attain a surge sealift capacity of 9.6 million square feet by the end of FY 2001, toward a goal of 10 million square feet. Surge sealift capacity is provided by fast sealift ships, large medium-speed roll-on/roll-off (LMSR) vessels, and the Ready Reserve Force (RRF).

Prepositioning military equipment and supplies near potential conflict regions reduces response time in contingencies. With material stored on land or afloat at overseas locations, only personnel and a relatively small amount of equipment need be airlifted to a theater at the outbreak of a crisis. Objectives for prepositioning are based on those forces required very early in a conflict to halt an enemy's advance.

## AIRLIFT FORCES

Military airlift forces provide a range of capabilities not attainable from civil aircraft. Features unique to military transport aircraft include the ability to air drop cargo and personnel; unload cargo rapidly, even at airfields lacking materiel-handling equipment; and carry outsize loads, such as Patriot missile systems, tanks, or helicopters. Of the cargo that must be airlifted in the early stages of a conflict, more than half is too large to be accommodated by even the biggest commercial cargo planes and must be transported by military aircraft. By the end of FY 2001, the military airlift fleet will consist of 58 C-17s, 88 C-141s, 104 C-5s, and 418 C-130s (all figures denote aircraft assigned for performance of their wartime missions). These aircraft are operated by active, Air National Guard, and Air Force Reserve squadrons.

Commercial aircraft augment military airlift forces in moving troops and standard-sized cargo. Through the CRAF program, the Department gains access to commercial passenger and cargo planes in times of crisis. In return for their participation in CRAF, carriers are given preference for the Department's peacetime passenger and cargo business. CRAF forces are mobilized in three stages, giving DoD access to approximately 60 percent of the passenger capacity in the long-range U.S. commercial fleet and nearly 75 percent of the cargo capacity. In the most demanding deployment scenarios, commercial aircraft would move nearly all of the passengers and more than one-third of the cargo airlifted to a conflict theater.

## SEALIFT FORCES

Sealift forces carry the full range of combat equipment and supplies needed to support military operations abroad. These forces include three major types of ships: containerships, used primarily to move supplies; LMSRs and other roll-on/roll-off (RO/RO) vessels, which move combat equipment; and tankers, used to transport fuels.

Sealift capacity comes from three sources: government-owned ships supporting the prepositioning program or maintained in reserve status, commercial ships under long-term charter to the Defense Department, and ships operating in commercial trade.

- The majority of government-owned ships are maintained in the Ready Reserve Force. This 87-ship fleet is composed primarily of RO/RO vessels, breakbulk ships, and tankers held at various levels of readiness. More than half of the ships are able to get underway in four to five days; the remainder can be readied for service in 10, 20, or 30 days.

- Augmenting the Ready Reserve Force are eight fast sealift ships and two hospital ships manned by partial crews. The fast sealift ships can begin loading on four days' notice, while the hospital ships can be readied for deployment in five days.

- LMSRs support both the prepositioning program and surge sealift. Once the full 20-ship LMSR fleet is deployed, these vessels will provide nearly all of the afloat prepositioning space required for Army unit equipment and approximately one-third of surge sealift capacity. Ten LMSRs have been delivered to date, and eight additional ships are scheduled for delivery by FY 2001. The remaining two vessels will join the fleet by the end of FY 2002. One LMSR, slated for deployment with the Maritime Prepositioning Force (MPF), will be configured specifically to carry Marine Corps equipment.

- To support peacetime operations, the Department charters dry cargo ships and tankers from commercial operators. These ships transport military cargo to locations not normally served by commercial routes.

- The U.S.-flag commercial fleet contains 198 ships with military utility. These include 110 dry cargo ships, 87 tankers, and one passenger ship. Another 175 commercial vessels that could contribute to military missions—81 dry cargo ships, 84 tankers, and 10 passenger ships—are maintained in the Effective U.S. Control (EUSC) fleet. These ships are owned by U.S. companies or their foreign subsidiaries and are registered in nations whose laws do not preclude the ships' requisitioning for military operations.

A number of the commercial vessels listed above can be made available for military contingencies under the Voluntary Intermodal Sealift Agreement (VISA), maintained by the Departments of Defense and Transportation with commercial cargo carriers. VISA provides access to commercial shipping capacity and to the intermodal capabilities of commercial carriers, such as rail, truck, and pier facilities. As with the CRAF program for airlift, VISA is structured to make sealift available in stages.

*AERIAL-REFUELING FORCES*

Aerial-refueling, or tanker, forces extend the range of airlift and combat aircraft by enabling these planes to be refueled in flight. The long-range tanker force consists of 472 KC-135 and 54 KC-10 Air Force primary mission aircraft. In addition to operating in the tanker role, both the KC-135 and KC-10 can be employed as passenger or cargo transports, with the KC-10 possessing a significant capability to perform tanker and airlift missions simultaneously.

Operating from bases throughout Europe, U.S. tanker forces played a crucial role in refueling combat aircraft deployed during Operation Allied Force. In addition, tankers formed an air bridge between the United States and Europe, enabling other military aircraft to fly non-stop from U.S. bases to destinations throughout the area of operations.

*PREPOSITIONING PROGRAMS*

The United States stores a variety of combat equipment and supplies at selected locations abroad. These stocks, maintained ashore and afloat, dramatically reduce the time required to deploy forces and the number of airlift sorties needed to move them.

Land- and sea-based prepositioning provide complementary capabilities for supporting military operations. Land-based prepositioning enhances crisis responsiveness in specific theaters and is the most economical way of maintaining materiel abroad. Afloat prepositioning, while more expensive, provides the flexibility to relocate stocks quickly within and between theaters to meet the demands of particular operations.

**Land-Based Prepositioning.** Land-based prepositioning programs are maintained in Europe, Southwest Asia, and the Pacific region. In Europe, the Army stockpiles equipment for three heavy brigades—two in central Europe and one in Italy. The Marine Corps stores equipment and 30 days of supplies for the lead echelon of a MEF in Norway. In addition, the Air Force maintains eight air base support sets—temporary shelters for early-arriving air base personnel—at a site in Luxembourg. Several of these sets were used to support humanitarian relief operations in Albania during Operation Allied Force.

In Southwest Asia, the Army stocks equipment for two heavy armor brigades. One brigade set is prepositioned in Kuwait, and the other set—which includes equipment to support a division headquarters—is located in Qatar. The Air Force stores air base operation sets in the region, many of which are being used to support contingency operations.

In Korea, the Army stockpiles equipment for a heavy armor brigade. The Air Force stores eight air base support sets at three locations in Korea to meet surge billeting requirements.

**Sea-Based Prepositioning.** Sea-based prepositioning programs support all four Services. The Department uses a mix of government-owned ships and commercial vessels to stockpile materiel at sea. Army equipment and supplies are carried aboard a fleet of chartered vessels, LMSRs, and an RRF ship. Stationed in the Indian and Pacific Oceans, these ships provide materiel for an armor brigade and selected combat support and combat service support units. Additionally, the fleet carries Army watercraft for port-opening operations. Plans call for an additional Army brigade set to be prepositioned afloat by FY 2001.

Marine Corps equipment and supplies are carried on a mix of vessels operating with the Maritime Prepositioning Force. The ships are organized into three squadrons, each capable of supporting a 17,300-person MEB for 30 days. The squadrons are stationed in the western Pacific, Indian Ocean, and Mediterranean Sea. The MPF will receive a new ship in FY 2000, and two additional vessels will join the force by the end of FY 2002. The new ships, converted specifically for MPF operations, will be allocated among the three MPF squadrons.

The sea-based prepositioning force also includes chartered ships carrying Air Force munitions and a Navy fleet (ashore) hospital. The remaining vessels—a government-owned tanker and two RRF ships specially equipped to transfer fuel directly ashore—are maintained for use by all U.S. forces. During Operation Allied Force, ammunition from one of the Air Force-chartered ships was used to support air combat operations in Kosovo.

Table 10 shows the projected inventories for key elements of the military mobility force structure at the end of FY 2001.

| Table 10 Military Mobility Forces, FY 2001 | |
|---|---|
| **Airlift (Operational)[a]** | |
| C-17 | 58 |
| C-141 | 88 |
| C-5 | 104 |
| C-130[b] | 418 |
| **Aerial Refueling (Operational)[c]** | |
| KC-135 | 472 |
| KC-10 | 54 |
| **Sealift** | |
| Ready Reserve Force Ships | 86[d] |
| Fast Sealift Ships | 8 |
| Large Medium-Speed RO/ROs | 18 |

[a] The inventory levels shown reflect primary mission aircraft.

[b] Does not include 14 aircraft operated by the Navy.

[c] These aircraft also perform airlift missions.

[d] Excludes four RRF ships tendered to the Military Sealift Command for use in peacetime operations.

## INVESTMENT

The aging of key elements of the U.S. force structure and the increase in asymmetric military threats underscore the need for continued defense modernization. Consistent with this requirement, the Department's FY 2001-2005 program:

- Emphasizes acquisition of advanced capabilities in support of Joint Vision 2010.

- Increases annual procurement funding to just over $60 billion in FY 2001, and exceeds that figure in each of the four subsequent years.

- Continues substantial investment in research and development and in science and technology programs in order to incorporate new technologies and techniques that could revolutionize U.S. warfighting capabilities.

Equipment modernization programs, described in the sections below, will be funded in part through cost-saving initiatives being pursued across the Department. Such initiatives include:

- Opening more than 200,000 billets to public-private sector competitions by FY 2005.

- Aggressively pursuing infrastructure reductions.

- Fully implementing acquisition reform initiatives.

- Pursuing business process reengineering, including labor-saving technologies.

### Aviation Forces

Aviation force modernization is an important part of the Department's overall investment program, constituting more than 10 percent of the funding planned for FY 2001.

#### FIGHTER/ATTACK AIRCRAFT

**Joint Strike Fighter (JSF).** The JSF is the Department's largest acquisition program and one of the most ambitious in concept. This project is intended to provide a family of aircraft for use by the Air Force, Navy, and Marine Corps, produced in variants configured to reflect the Services' individual needs. The JSF will replace the F-16 in the Air Force, the F/A-18C in the Navy, and the F/A-18C/D and AV-8B in the Marine Corps. Through substantial commonality across the Service variants, JSF avoids the need for separate aircraft development programs that would be prohibitively expensive to conduct in parallel.

The JSF is projected to combine substantial combat mission radius, high survivability against air defenses, and large payloads by capitalizing on technological advances in electronics, materials, and manufacturing processes. The program will continue in the concept demonstration phase during FY 2000; engineering and manufacturing development (EMD) is slated to begin in FY 2001. The concept demonstration process involves a competition between two aircraft designs, one developed by Boeing and the other by Lockheed Martin. Construction of two demonstrator aircraft by each contractor is well underway, and flight tests will begin in FY 2000. The tests will help refine aircraft propulsion integration and flight control design, while ensuring the aircraft's suitability for shipboard operations. Construction of the demonstrators also will provide insights into the degree of commonality that can be achieved among JSF variants. Successful completion of the flight test program will give greater confidence in the EMD phase and support the planned production phase. Procurement of the first aircraft, for the Air Force, is scheduled for FY 2005.

Success in the JSF program depends both on technical engineering factors and on cost control. While the JSF is not projected to match the unique capabilities of more specialized aircraft, it will provide a superior combination of multirole capabilities within affordable limits. A thorough analysis of alternatives is underway to confirm the aircraft's readiness for entry into the EMD phase in FY 2001.

The JSF has attracted significant interest from friendly nations considering potential replacements for their fleets of combat aircraft. The United Kingdom is a full collaborative partner, planning to replace its Royal Navy Sea Harriers and Royal Air Force GR-7 (Harrier variant) aircraft with the short takeoff and vertical landing (STOVL) variant of the JSF. Three other nations that have become associate partners—the Netherlands, Norway, and Denmark—are determining whether the JSF could meet their future strike-fighter requirements. In addition, Canada and Italy are monitoring the system's initial development efforts as informed partners.

**F-22.** The F-22 will replace the F-15C/D in the air-superiority role and will possess substantial air-to-ground capability as well. The F-22 is expected to be even more effective than the F-15 due to its significantly lower radar signature, highly integrated avionics system (for situation awareness and targeting), and superior aerodynamic performance. The F-22's larger wing area, more powerful engines, and superior engine thrust control features all contribute to its improved maneuverability relative to the F-15.

The first two of nine F-22 EMD test aircraft are flying at Edwards Air Force Base, California, and the third aircraft will arrive in the spring of 2000. The fourth test aircraft—the first to incorporate mission avionics—is planned to commence flight tests in mid-2000. Aerodynamic flight testing conducted thus far has been very successful. The aircraft continue to meet or exceed design goals for this stage of development, including demonstration of supersonic cruising flight, full flight altitude, and demanding high-angle-of-attack maneuvers. All nine EMD aircraft are planned to be operational by the end of FY 2001.

The Department's F-22 acquisition strategy has been modified to reflect congressional action on the FY 2000 program. Beyond the nine EMD aircraft, plans continue to call for acquisition of two production representative test vehicles (PRTVs) with FY 1998 and 1999 funds. Six additional PRTVs will be acquired prior to the start of low-rate initial production (LRIP), now planned for FY 2001. The second PRTV lot will be acquired with research and development funding, as directed by Congress. Advance procurement funds in FY 1999 enabled initial work to begin on the second PRTV lot. About $723 million will be committed to the PRTV effort during FY 2000. The FY 2001 budget provides an additional $404 million for PRTV acquisition; a final funding increment of $148 million is programmed for FY 2002.

The Department plans to procure a total of 333 F-22 aircraft with production funding. (The overall quantity of developmental and production aircraft remains unchanged.) No change in the previously planned testing or design review process is anticipated as a result of the congressional shift of FY 2000 production funds to the research, development, test, and evaluation account.

**F-16s, A-10s, and F-15s.** The Department's plan for Air Force fighter/attack aircraft calls for the F-16 multi-role fighter force—which constitutes about 50 percent of the force structure—to operate beyond 2010, pending the delivery of replacements from the JSF program. Maintaining force readiness with aircraft whose ages are unprecedented for fighter systems will be a growing challenge in future years. It is anticipated that the sturdy A-10 attack aircraft can operate well into the 2020s, assuming some future life-extension efforts. As reported in past years, some F-16s and A-10s have been put into long-term storage as a hedge against a possible future need to refurbish operating aircraft. The first lot of 100 early-model F-16s is already in storage. A second lot of 100 aircraft was planned to enter storage in FY 2000, but some of these aircraft will now be retained in operational Air National Guard units for a few years longer.

The Department initiated a program in FY 2000 to procure 30 new F-16C/D aircraft in an air defense suppression configuration. Acquisition of these aircraft serves several purposes, most importantly the provision of sufficient air defense suppression aircraft to allocate one squadron to each of 10 AEFs. Six F-16s are programmed for procurement in FY 2003 and seven in each of the two subsequent years. Additional F-16 foreign sales were made during 1999, extending F-16 production well into this decade.

The Congress added $275 million in FY 2000 for procurement of F-15Es for the Air Force. Five aircraft are to be acquired with these funds. The additional aircraft will be assigned to the backup inventory to offset future

peacetime attrition. Their acquisition will extend the service life of the existing F-15E force structure.

**F/A-18.** The F/A-18E/F is the Navy's principal fighter/ attack aircraft acquisition program. The F/A-18E/F will replace older F/A-18 models as well as F-14s. In addition to providing greatly improved survivability over earlier-model F/A-18s, the E/F version will have much greater operational utility due to its larger weapons payload and greater carrier recovery payload. F/A-18E/F aircraft also will increase carrier air-wing flexibility through their ability to refuel other strike-fighters in flight. Earlier F/A-18 models lack the growth potential to accommodate the set of technological improvements, including advanced electronic countermeasure systems and significant radar signature reductions, that will be needed for future operations.

For the longer term, the Navy plans to make the transition to JSF procurement as soon as possible. The F/A-18E/F acquisition plan calls for the procurement of between 548 and 785 aircraft, depending upon the pace that JSF production can achieve.

The F/A-18E/F completed its initial operational test and evaluation (IOT&E) during FY 1999. F/A-18E/Fs participating in the test flew more than 800 sorties, totaling over 1,400 flight hours. A wide variety of operational trials, including joint force exercises, were conducted. The test schedule was accomplished almost exactly according to plan, and all the information sought was collected. The Navy's test command will release its report early in 2000, to be followed later in the year by DoD's independent OT&E report.

The operational impact of deficiencies uncovered during pre-IOT&E flight tests was investigated thoroughly during 1999. In support of that evaluation, the Navy established an independent review panel to consider the effects of noise and vibration on weapons carriage. The panel recommended a variety of improvements for consideration, ranging from adjustments in wing flight control surface settings to relatively minor aerodynamic modifications. Assessments currently underway will help identify the most cost-effective approaches. Over the long term, improved aerodynamic analysis tools developed through basic research programs will help pinpoint needed design improvements early in the development process.

Production of the 62 F/A-18E/Fs funded in FY 1997-1999 is well along, with a total of 13 aircraft delivered through December 1999. The production rate continues to increase, with 36 aircraft funded in FY 2000 and a further 42 requested in FY 2001. Full-rate production of 48 aircraft per year is slated to commence in FY 2002. Initial operational capability is planned for FY 2001, and the first carrier-based overseas deployment is scheduled for FY 2002. F/A-18E/F support funding provides full allowances of targeting systems and electronic countermeasures equipment, as well as sufficient lesser ancillary equipment (such as fuel tanks and bomb racks) for squadrons on overseas deployments and for testing and training.

**AV-8B.** The AV-8B remanufacturing program is progressing, with 28 aircraft delivered through the end of 1999. Of the 72 AV-8Bs programmed for remanufacturing, 62 were funded in FY 2000 and prior years. The FY 2001 budget provides for procurement of the remaining 10 aircraft. The Marine Corps plans to replace the AV-8B, as well as the F/A-18C/D, with the Joint Strike Fighter. Pending the initial delivery of Marine JSFs near the end of this decade, some Navy F/A-18Cs will be transferred to the Marine Corps. In addition, 24 Marine F/A-18As will be equipped with new computers and sensors, which will enable them to carry modern air-to-air and air-to-ground ordnance. This will leave a balance of 76 Marine F/A-18s in the earlier configuration; these aircraft will be capable of carrying laser-guided (but not GPS-aided) munitions and Sparrow (rather than AMRAAM) medium-range air-to-air missiles.

**Trainer Aircraft.** The FY 2001 budget includes funds to procure 12 T-45 trainer aircraft for the Navy. The need to acquire additional T-45s in subsequent years is being evaluated as part of a Navy review of alternative approaches for meeting future trainer aircraft requirements. To preserve a range of options, T-2C aircraft being retired will be placed in secure storage for potential reactivation as part of a mixed fleet of training aircraft, should such an approach be deemed the most efficient long-term solution.

### CONVENTIONAL BOMBERS

**B-52.** The B-52 has both conventional and nuclear missions. Upgrades for the B-52 force will keep it capable of employing the latest munitions and communicating with other forces. B-52s already are capable of carrying the Joint Direct Attack Munition (JDAM), the Wind-Corrected Munitions Dispenser (WCMD), and the Sensor-Fuzed Weapon (SFW). The Joint Standoff

Weapon (JSOW) will be added to the B-52 force in FY 2000 and the Joint Air-to-Surface Standoff Missile (JASSM) in FY 2001. The existing ALR-20 radar warning receiver on the B-52, which provides information on enemy electronic emissions, will be replaced with a system capable of recognizing the latest threat signals.

**B-1.** The B-1 will be the backbone of the future conventional bomber force. Upgrades completed in 1999 provided the B-1 with an advanced navigation system and an improved communications suite. ALE-50 towed decoys are now being fielded on the B-1 force; major enhancements to the aircraft's computers and electronic countermeasures system will be incorporated starting in FY 2003. The B-1 can deliver the entire family of advanced cluster munitions (CBU-87/89/97) as well as MK-82 and MK-84 general purpose bombs, MK-62 mines, and the GBU-31 (JDAM), increasing its effectiveness against area targets and vehicles in low-threat environments. The WCMD will be added to the B-1 weapons suite in FY 2002, followed by JSOW and JASSM in FY 2003.

**B-2.** The B-2 has both nuclear and conventional missions. The stealth features incorporated in this aircraft make it difficult to detect, especially at night and in adverse weather; its ability to penetrate heavy defenses is further enhanced when it is employed with standoff jamming aircraft. All 21 aircraft in the programmed B-2 force have been delivered. The capability of these aircraft will increase as they are upgraded from the test configuration and initial Block 10 and Block 20 configurations to the Block 30 design; completion of these modifications is scheduled for July 2000. Block 30 aircraft incorporate improved stealth features and advanced avionics, and are capable of employing the JDAM and 4,700-pound GBU-37. The B-2 was the only aircraft to employ JDAM during Operation Allied Force. JSOW will be added to the B-2 weapons suite during FY 2000, followed by JASSM in FY 2003. During the transition to the Block 30 standard, some aircraft will be undergoing conversion, rendering them unavailable for immediate use.

*SPECIALIZED FORCES*

During Operation Allied Force, the Department's fleets of specialized aircraft, particularly those that perform ISR missions, were in high demand. This occurred for a number of reasons, including the extensive use by the Serb forces of tactics of concealment and deception. These tactics placed a premium on U.S. capabilities to perform continuous surveillance of regions in which

Serb forces might be hiding. The Department has, therefore, taken a number of actions to enhance its fleets of specialized aircraft, as described subsequently in this section.

**Joint Surveillance Target Attack Radar System (JSTARS).** The JSTARS system, operated by the Air Force and the Army, locates, identifies, and tracks enemy targets on the ground in support of air and ground operations. The system consists of two primary elements: large transport-class aircraft (E-8s) carrying a powerful multimode radar with on-board systems-operating personnel, and mobile common ground stations that receive and exploit radar data. The FY 2000 budget provided funds to procure a fourteenth production E-8C; a fifteenth aircraft is funded in FY 2001. Two block upgrades will be initiated during the next few years: the Computer Replacement Program (Block 20), which will begin in FY 2001, and the satellite communication version (Block 30), commencing in FY 2002. Additionally, the budget continues funding for a major upgrade to the E-8 radar system being accomplished as part of the Radar Technology Insertion Program. The acquisition profile has been structured to provide five modified aircraft by FY 2011.

**U-2.** The Air Force high-altitude U-2 force is receiving several enhancements, most importantly an upgraded radar with greatly improved imagery and moving-target intelligence features. Additional ground-processing capabilities, which will support endurance unmanned aerial vehicle (UAV) operations, are being incorporated.

**UAVs.** Two Air Force high-altitude endurance (HAE) UAVs—Global Hawk and Dark Star—were evaluated in the HAE UAV Advanced Concept Technology Demonstration (ACTD). Early results from this ongoing effort formed the basis for the selection of the Global Hawk for engineering development and eventual deployment. The Dark Star low-observable UAV segment of the ACTD was terminated in January 1999. Global Hawk is performing well and will continue participating in joint operational demonstrations during FY 2000. This UAV will complement the U-2 force in providing high-altitude surveillance capability. It is designed to provide electro-optical, infrared, and synthetic aperture radar imagery as well as moving-target surveillance capability. The Global Hawk post-ACTD now includes an EMD phase, procurement plan, and operations and support concepts. A total of eight Global Hawk UAVs are planned for procurement through FY 2005.

The Army and the Navy also are pursuing tactical UAV programs. The Army has initiated a program for a small, land-based UAV to be fielded in the early 2000s. A design competition for this system is underway. The Navy will begin developing a UAV with a vertical-takeoff-and-landing (VTOL) capability for employment on ships with small decks and for operation ashore in locations with limited landing facilities, including urban areas. The Navy and Marine Corps will continue to operate the Pioneer UAV until the VTOL UAV enters service. Both the Army and Navy UAVs will incorporate the Tactical Control System, ensuring command, control, and communications interoperability in joint engagements. The Tactical Control System also will be considered for retrofit on Predator endurance UAVs operated by the Air Force. Although acquisition of Predator systems concluded in FY 2000, procurement of attrition replacement UAV air vehicles will continue through at least FY 2005.

**RC-135 and EP-3.** Air Force RC-135 Rivet Joint and Navy EP-3 aircraft are being upgraded to Joint Signals Intelligence Avionics Family standards to provide higher levels of interoperability, operational flexibility, and capability. The Rivet Joint fleet has been expanded to 16 aircraft. The Navy's land-based EP-3 fleet is being increased to 13 aircraft, with an additional aircraft (being converted from the P-3C ASW configuration) scheduled for delivery in FY 2004.

**E-3 and E-2C.** Installation of numerous upgrades—radar improvements and new passive emitter detection systems—on Air Force E-3 Airborne Warning and Control System (AWACS) aircraft will continue well into the next decade. Planned computer and display improvements are being slowed to reduce crew training burdens. The Air Force is providing funding for parallel improvements in NATO E-3s via the NATO AWACS modernization effort; a computer and display upgrade being accomplished as part of the NATO program will serve as the basis for the U.S. fleet improvements. New E-2Cs for the Navy are being produced initially at a rate of three per year under a multiyear contract covering FY 1999 through FY 2003. Both the E-3 and E-2C fleets are receiving reliability and maintainability improvements to keep them viable past the year 2010. Beginning with FY 2001 deliveries, E-2Cs will be equipped with Cooperative Engagement Capability subsystems to improve targeting of missiles and aircraft.

**EA-6B.** EA-6B tactical airborne electronic warfare aircraft will be receiving further capability enhancements,

some as a result of experience in Operational Allied Force. Installation of an improved avionics package (ICAP III) will be accelerated beginning in FY 2003 and will reach a maximum rate of 15 sets per year by FY 2005. The FY 2001-2005 program provides for the formation of one additional EA-6B squadron. Drawing from the existing aircraft inventory through reassignment of selected test aircraft and benefiting from the activation of all previously stored aircraft, the new unit will become operational in FY 2003. Its addition will bring the total number of Navy and Marine Corps EA-6B squadrons to 20; five of the Navy squadrons will be earmarked for land-based expeditionary deployments. Combined with the capability upgrades discussed above, the creation of the new unit will enhance the contribution of the EA-6B force to combat operations. Also, the Department has initiated a joint effort to determine the capabilities that should be developed to replace the EA-6B as this fleet begins to retire after 2010.

**EC-130H.** The FY 2001-2005 program provides for the upgrade of two EC-130H Compass Call aircraft to a common (Block 35) configuration. With this upgrade, a total of 13 Block 35 aircraft will be available to combatant commanders.

### AVIATION FORCE WEAPONS

**Advanced Medium-Range Air-to-Air Missile (AMRAAM).** The Air Force and Navy will continue procurement of AMRAAM missiles throughout the FYDP period. Performance is being enhanced in a number of areas, including kinematics and lethality.

**AIM-9X.** The AIM-9X is a new short-range air-to-air missile under development by the Air Force and the Navy. An advanced version of the AIM-9 Sidewinder missile, it combines the AIM-9M's motor, fuze, and warhead with a new seeker and airframe. Other enhancements incorporated in the AIM-9X design include the ability to be cued to a target by a helmet-mounted sight that can align the missile's seeker head with targets well outside the aircraft radar's field of view. The combination of improved missile performance and the new helmet-mounted sight will recover an advantage in close-in combat that was lost several years ago when advanced new foreign systems, such as the Russian AA-11, were deployed. Affordability and growth potential are key tenets of this program. The AIM-9X entered engineering and manufacturing development in FY 1997. Early testing led to some improvements in component design and production quality that

are being proven as flight tests proceed. Assuming continued test successes, the system will enter low-rate production in FY 2001.

**Joint Air-to-Surface Standoff Missile (JASSM).** The JASSM is a new long-range missile designed to have excellent autonomous navigation capability and an autonomous terminal seeker. JASSM's standoff capability will enable U.S. aviation forces to hold highly defended targets at risk while minimizing aircraft attrition. A key goal in the system's development is achieving desired performance while maintaining low unit cost. This Air Force-led joint program is currently in EMD. Initial flight tests revealed a minor design problem (a wing-opening actuator failed), leading to a thorough review of program plans and a subsequent decision to add 10 months to the EMD phase to ensure an acceptable risk level. Developmental flight testing will now begin in FY 2001. Assuming successful test results, low-rate production will commence in FY 2002. The FY 2001 budget includes Navy development funding to ensure that the missile will be suitable for carrier operations. While no Navy procurement for the F/A-18E/F is currently planned, the missile will be considered for future use on both the JSF and F/A-18E/F.

**Joint Direct Attack Munition (JDAM).** The JDAM program modifies existing general-purpose bombs to add an inertial navigation system (INS) coupled to satellite Global Positioning System (GPS) data. INS/GPS guidance will improve bombing accuracy from medium and high altitudes, permitting the delivery of these free-fall munitions in adverse weather. JDAM proved very successful in Operation Allied Force, although its early production status limited the number of weapons available for use. The Department has made every effort to accelerate delivery of contracted weapons and requested a large near-term increase as part of the FY 1999 emergency supplemental funding bill. Low-rate production of JDAM tail-kits for MK-84 and BLU-109 warheads began in FY 1997 and FY 1999, respectively; MK-83 tail-kits will enter production in FY 2000. The Air Force and Navy are currently revising the design of the tail-kit for the MK-84 warhead. The new design has passed all qualification testing, and Navy operational testing will be conducted in FY 2000. Additionally, the Navy and Marine Corps are pursuing development of a JDAM variant with improved accuracy under a product improvement program.

**Joint Standoff Weapon (JSOW).** JSOW is a long-range glide weapon with autonomous navigation ability. Capable of employment in adverse weather, it provides an accurate standoff method of delivering tactical munitions at a relatively low cost. The baseline variant, which entered production in FY 1997, carries combined-effects bomblets for use against area targets. To provide standoff antiarmor capability, a follow-on version will carry the BLU-108 payload derived from the Sensor-Fuzed Weapon (described next). EMD for the BLU-108 variant began in FY 1996, and low-rate production commenced in FY 1999. Consistent with congressional direction, production of this variant has been suspended during FY 2000. A third JSOW variant, incorporating a unitary warhead and autonomous seeker for target discrimination, is also in development. The unitary variant was redesigned over the past year, enabling a significant reduction in acquisition costs without a decrease in overall effectiveness. Production of the unitary variant is slated to begin in FY 2002.

**Sensor-Fuzed Weapon (SFW).** Designed for top attacks on enemy armor, the SFW is a tactical munitions dispenser containing 10 BLU-108 submunitions, each with four Skeet warheads. This weapon is capable of achieving multiple kills against armored vehicles during day or night and in adverse weather. Development of an improved BLU-108 submunition for SFW and JSOW began in FY 1996 as part of a preplanned product improvement program; production of the improved SFW will commence in FY 2001. The improved munition will be much more effective than earlier versions at only a small increase in cost. Enhancements include the addition of an active sensor, a multimission warhead, and expansion of the weapons pattern over the ground by more than 50 percent. These changes will reduce the system's susceptibility to countermeasures and improve its soft-target lethality and coverage, while reducing the impact of target location errors.

**Standoff Land Attack Missile (SLAM).** The Navy SLAM is a modified Harpoon antiship missile incorporating a GPS receiver, an AGM-65 Maverick imaging infrared seeker, and a Walleye datalink for man-in-the-loop control. An upgraded version of the missile, designated SLAM-ER, provides an approximately 100 percent increase in range over the baseline SLAM system. The ER version also incorporates enhancements in accuracy, anti-jam guidance capability, and hard-target penetration. Improvements in the SLAM-ER's mission planning system will enhance the weapon's ease of employment. SLAM-ER Plus, a variant further enhanced by an autonomous terminal seeker, entered production in FY 1998. Approximately 400 SLAM/SLAM-ER missiles are slated for conversion to the SLAM-ER Plus configuration through FY 2005.

**Wind-Corrected Munitions Dispenser (WCMD).**
The WCMD is a modification kit for advanced cluster bomb dispensers that inertially guides the units to compensate for high-altitude winds, thus improving delivery accuracy. This modification will be made to the CBU-87 (Combined Effects Munition), CBU-89 (Gator), and CBU-97 (SFW). Delivery of production units will begin in FY 2000.

### Naval Forces

The FY 2001-2005 program continues a broad range of modernization initiatives for naval forces. Programmed investments will add the capabilities needed to counter emerging threats, while providing the mix of ships and supporting systems required for 21st century operations. Toward that end, the program continues several smart-ship initiatives aimed at reducing manning requirements on existing ships, including aircraft carriers, amphibious ships, and surface combatants. Investments in these initiatives, totaling about $380 million over the FYDP period, are expected to achieve savings of approximately $470 million through FY 2005.

To address rising near-term readiness needs, several shipbuilding and conversion programs have been restructured. The revised plan funds 39 new-construction ships over the FYDP period, adjusting the funding and timing of selected programs. Highlights of the FY 2001-2005 shipbuilding plan are provided in Table 11.

The average age of the fleet is currently at an acceptable level. The combination of new ship deliveries and retirements of aging vessels is projected to keep the fleet's age within acceptable bounds during the FYDP period and beyond.

### AIRCRAFT CARRIERS

The FY 2001-2005 program sustains a force of 12 deployable aircraft carriers. The tenth, and final, Nimitz-class carrier (CVN-77) is funded in FY 2001 on the accelerated schedule approved by Congress in 1998. Advance procurement funds for shipbuilder construction and nuclear propulsion components were included in the FY 2000 appropriation. The Navy negotiated cost reductions with the CVN-77 contractor in 1999 as part of an overall strategy to achieve efficiencies in the ship's construction.

CVN-77 will serve as a bridge to the next generation of aircraft carriers, designated CVNX. More than $200 million of the approximately $5 billion programmed for CVN-77 through FY 2001 will be used to develop technologies for incorporation into the CVNX class. Some of these technologies also will be considered for backfit into existing Nimitz-class carriers.

### FY 2001-2005 Shipbuilding Program
Table 11

| | FY 2001 | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FYDP Total |
|---|---|---|---|---|---|---|
| **New Construction** | | | | | | |
| CVN-77 (Aircraft Carrier) | 1 | 0 | 0 | 0 | 0 | 1 |
| SSN-774 (Attack Submarine) | 1 | 1 | 1 | 1 | 1 | 5 |
| DDG-51 (Guided-Missile Destroyer) | 3 | 2 | 2 | 2 | 1 | 10 |
| DD-21 (Land-Attack Destroyer) | 0 | 0 | 0 | 0 | 1 | 1 |
| LHD-8 (Amphibious Assault Ship) | 0 | 0 | 0 | 0 | 1 | 1 |
| LPD-17 (Amphibious Transport Dock) | 2 | 2 | 2 | 2 | 0 | 8 |
| T-ADC(X) (Dry Cargo Ship) | 1 | 3 | 3 | 2 | 2 | 11 |
| JCC(X) (Joint Command Ship) | 0 | 0 | 0 | 1 | 1 | 2 |
| **Service-Life Extensions/Overhauls** | | | | | | |
| Carrier Refueling Overhaul | 0 | 1 | 0 | 0 | 0 | 1 |
| Attack Submarines[a] | 1 | 1 | 2 | 1 | 1 | 6 |
| LCAC Modernization | 1 | 2 | 3 | 3 | 4 | 13 |

[a] In addition to these refueling overhauls, the FYDP provides $1.1 billion to enhance the submarine force either by refueling an additional four SSN-688-class submarines or by initiating the conversion to a conventional configuration (SSGN) of up to four Trident ballistic missile submarines (SSBN) that are scheduled to be removed from service. For purposes of calculating submarine force levels through the FYDP, a total of 10 SSN refueling overhauls has been assumed.

Funds have been programmed in later years of the FYDP for continued research and development, advanced planning and design, and advance procurement of CVNX components. CVNX carriers will be nuclear powered and will each be capable of supporting an air wing of 75 aircraft, consistent with requirements established by a 1998 Navy analysis of alternatives.

The Navy is developing the new CVNX class through an evolutionary, multi-carrier process. Initial technology efforts and new design features, such as a new island, will be incorporated into CVN-77. CVNX-1, slated to begin construction in FY 2006, will retain the existing Nimitz hull, while adding a new nuclear power plant and an improved electrical generation and distribution system incorporating major technological advances. The FY 2001-2005 program provides funds to develop a new Electromagnetic Aircraft Launch System for CVNX-1. Beyond CVNX-1, a new hull design and other, more substantial system changes are being considered for CVNX-2, which is planned for procurement in FY 2011. Through this evolutionary approach, the Navy seeks to develop a class of carriers that will provide improved warfighting capabilities at an affordable acquisition cost and reduced ownership costs.

The FY 2001 budget funds a new, phased approach to financing aircraft carrier refueling overhauls. The overhauls previously programmed for FY 2001 and FY 2005 have been rephased to FY 2002 and FY 2006. This plan is not expected to delay completion of these scheduled maintenance periods.

### AMPHIBIOUS SHIPS

Amphibious lift forces play increasingly important roles in joint operations, reflecting the growing emphasis on regional contingencies, a broader range of peacetime operations, and the rapid-deployment requirements of naval expeditionary forces. The FY 2001-2005 program continues a robust modernization of the amphibious force. Programmed investments support a long-term goal of achieving a 36-ship force comprising 12 ARGs.

The key to modernizing the amphibious force in the near term is the new amphibious transport dock ship, the LPD-17. The addition of 12 of these ships to the fleet will alleviate the current shortfall in vehicle space. The LPD-17 is designed to carry approximately 700 troops and two Landing Craft Air Cushion (LCACs), while providing 25,000 square feet of vehicle stowage space,

36,000 cubic feet of cargo space, and the capacity to accommodate four CH-46 helicopters or a mixed load of AH-1/UH-1, CH-46, and CH-53E helicopters and MV-22 tilt-rotor aircraft. Four LPD-17s have been funded to date; the first of these ships is slated to enter the fleet in FY 2003. The FY 2001-2005 shipbuilding program completes the planned 12-ship buy, procuring the remaining eight vessels at a rate of two per year in FY 2001-2004.

Investments in amphibious assault ships will continue during the FYDP period, with funds for one additional LHD-class ship programmed in FY 2005. The Navy has procured seven LHDs to date. Acquisition of an eighth ship will provide sufficient large-deck amphibious assault vessels to sustain a 12-ARG force when the first ship of the LHA-1 class reaches the end of its 35-year service life in 2011. In preparation for LHD-8's construction, design work has begun on a new gas-turbine propulsion system. Studies currently underway within the Navy are examining other cost-effective design changes that could be incorporated into LHD-8. Funding provided by Congress in FY 1999 and FY 2000 for construction of LHD-8 will be used to finance this ship.

The FY 2001 budget provides continued funding for a service life extension of the LCAC fleet. This program increases the LCAC's originally planned 20-year operational life to 30 years. A high-speed, fully amphibious landing craft, the LCAC is capable of carrying a 60-ton payload at speeds greater than 40 knots over a range of approximately 200 nautical miles. Carrying equipment, troops, and supplies, the LCAC transits at high speed over the sea and across the beach, quickly offloads its cargo, and then returns to its home ship to take on additional sorties. LCACs provide amphibious task force commanders flexibility in selecting landing sites. Capable of delivering cargo directly onto dry land, they afford access to more than 70 percent of beaches worldwide.

### SUBMARINES

As noted earlier, the SSN force will be maintained at 55 units through FY 2001 to ensure that there is no diminution in the fleet's ability to respond to high-priority national needs. The FY 2001-2005 FYDP provides resources to sustain the attack submarine force either by refueling additional 688-class submarines or by converting SSBN submarines to an SSGN configuration.

The Navy's new Seawolf submarines continue to demonstrate their superior capabilities in all critical

warfighting areas. The first two submarines of this class—Seawolf (SSN-21) and Connecticut (SSN-22)—entered service in the late 1990s. The third and final unit, Jimmy Carter (SSN-23), is scheduled for delivery in 2004.

Virginia (SSN-774) class submarines will provide a more affordable follow-on to the Seawolf class. Their addition to the fleet will enable attack submarine force levels to be sustained as older 688-class SSNs leave service. Incorporating new technologies, including those developed for the Seawolf program, these submarines will be highly effective in performing traditional open-ocean ASW and antisurface missions as well as littoral and regional operations, which will be their primary emphasis. Such operations include standard SSN missions plus mine warfare, special forces insertion/extraction, battle group support, and intelligence-gathering. The Virginia class will be configured to adapt easily to evolving mission requirements. The FY 2001-2005 program funds a robust submarine technology initiative designed to improve capabilities while reducing life-cycle costs.

Virginia-class SSNs are being constructed under an innovative teaming agreement between the nation's two builders of nuclear-powered submarines, Electric Boat Corporation and Newport News Shipbuilding. Under this arrangement, Electric Boat will assemble the first and third submarines and Newport News, the second and fourth. Five Virginia-class SSNs are programmed for procurement during FY 2001-2005 at a rate of one per year.

### SURFACE COMBATANTS

The FY 2001-2005 program sustains a modern force of 116 surface combatants. The age of the surface combatant force is relatively low, averaging about 14 years in FY 2001 and a projected 16 years in FY 2005. Continued deliveries of new Arleigh Burke-class guided-missile destroyers (DDG-51s) carrying the Aegis weapons system will more than offset deactivations of older surface combatants. The share of Aegis-capable ships in the force will increase from 56 percent to 68 percent during the FYDP period.

The FY 2001-2005 program restructures the DDG-51 acquisition profile, reducing procurement to two ships per year in FY 2002-2003 and extending production two year by procuring two ships in FY 2004 and one in FY 2005. These adjustments are needed to accommodate delays in the DD-21 program and to provide additional resources for other high-priority needs.

DDG-51 destroyers are equipped with the Aegis weapon system and the SPY-1D multifunction phased-array radar. The DDG-51 combat system includes the Mk-41 Vertical Launching System, advanced antisubmarine and antiair systems and weapons, and Tomahawk cruise missiles. New DDG-51s, starting with the ships delivered in FY 2002, will provide improved land-attack capabilities as well as area defenses against ballistic and cruise missiles. They will be able to operate independently or as part of carrier battle groups, surface action groups, or ARGs, or in support of underway replenishment groups. The first Flight IIA variant, launched in FY 1999, incorporates facilities to support two embarked SH-60 LAMPS helicopters, significantly enhancing the fleet's sea control capabilities.

The FY 2001-2005 program begins procurement of the new DD-21 land-attack destroyer. Resources have been added to support high-priority, near-term efforts for research and development of key DD-21 systems. To ensure that adequate time is available to complete these efforts, procurement of the lead ship has been deferred one year, to FY 2005. The extension of the DDG-51 program, discussed previously, will sustain the surface combatant industrial base while the DD-21 completes development.

The DD-21 will provide firepower at long ranges in support of joint operations ashore. With its state-of-the-art information technologies, it will operate in close coordination with other naval forces, as well as with U.S. ground and land-based air forces. The emphasis on sensor-to-shooter connectivity will provide naval or joint task force commanders the flexibility to counter any maritime threat and destroy a variety of land targets. Moreover, the DD-21 will be difficult to detect by potential adversaries.

The FY 2001 budget continues an initiative to gain additional capabilities at low cost from selected CG-47-class cruisers (CG-52 and subsequent ships). Under this program, improvements will be incorporated into 12 Aegis cruisers between FY 2002 and FY 2005. Planned modifications include the addition of the Area Air Defense Commander system and area theater ballistic missile defense capability. The upgraded ships also will be capable of employing the new Extended-Range Guided Munition (discussed in the Naval Surface Fire Support section).

## COMBAT LOGISTICS

The FY 2001-2005 shipbuilding program procures 11 T-ADC(X) dry-cargo ships, completing the planned 12-ship buy. The program also accelerates the procurement schedule relative to previous plans, funding three ships per year in FY 2002 and FY 2003. These new multiproduct vessels will replace aging T-AE and T-AFS ammunition and dry cargo ships and AOE-1 fast combat stores ships. They will be used to carry both dry and refrigerated products as well as ammunition and a limited amount of fuel. To improve affordability, the ships will be procured using commercial business and construction practices to the maximum extent possible.

## COMMAND SHIPS

The Navy is conducting a study to determine the potential need for a new class of command ships. The new vessels, initially designated Joint Command Ships (JCC(X)), would replace the four existing command ships, which range in age from 30 to 36 years. The JCC(X) would provide a platform for performing joint command and control functions in forward areas. The first phase of the Navy study, to be completed in spring 2000, will assess alternative methods of performing these functions to determine whether the required capabilities could be provided by systems other than command ships. The alternatives include relying on land-based facilities (in both the United States and forward areas); using a mix of existing ships, such as aircraft carriers, amphibious ships, and cruisers; or employing some combination of these approaches. Pending completion of the initial phase of the study, the Department has programmed funds to acquire two JCC(X) ships—one each in FY 2004 and FY 2005.

## P-3C MARITIME PATROL AIRCRAFT

Investments in the MPA force focus on service life extensions (SLEPs) and upgrades of the existing P-3C fleet. By updating aircraft support systems and replacing components susceptible to fatigue, the SLEP will enable the P-3C fleet to remain operational until about 2020.

The FY 2001-2005 program also provides for the continued modernization of the P-3C fleet under the Antisurface Warfare Improvement Program (AIP). AIP is significantly expanding the P-3C's surveillance, combat identification, and antiship capabilities through the application of commercial off-the-shelf technologies.

The gains in operational performance afforded by these enhancements were demonstrated during the P-3C's employment in Operation Allied Force. Of the 40 AIP kits purchased to date, 21 have been installed. The FY 2001-2005 program completes the planned 52-kit buy, procuring the final 12 AIP kits in FY 2001.

## MINE COUNTERMEASURES

The Navy continues to operate dedicated mine countermeasure (MCM) ships, helicopters, and explosive ordnance disposal forces, while developing systems that will be assigned to battle groups and amphibious ready groups. These new mine warfare systems will provide airborne, surface, and subsurface MCM capabilities that will allow the fleet to avoid—or reduce to manageable proportions—mine threats in regional contingencies in a timely manner.

## ANTISUBMARINE WARFARE

Antisubmarine warfare remains a challenging task. ASW programs funded in FY 2001-2005 are generally consistent with the course outlined in the Integrated Antisubmarine Warfare Road Map, forwarded to Congress in 1999. The ASW initiatives pursued over the FYDP period will ensure that a robust combined-forces ASW capability is maintained to meet projected threats.

## WEAPON SYSTEMS

**Tomahawk.** The Tomahawk cruise missile enables surface combatants and submarines to launch attacks against land targets from long ranges in all types of weather. As demonstrated in Operation Allied Force, Tomahawk missiles provide force commanders with a versatile, precision strike capability. The 1997 decision to terminate Block III production, combined with the use of Tomahawk missiles during the Balkan and other recent operations, has reduced stores of the newest Block IIIC missile below acceptable levels. To maintain adequate inventories of Block III Tomahawks for future contingencies, an emergency supplemental funding bill passed by Congress following the Kosovo operation provides for the conversion of 624 older Block IIC/D and Tomahawk antiship missiles to the Block IIIC configuration. For the longer term, the Navy is continuing development of an advanced, more affordable version of the Tomahawk system, designated Tactical Tomahawk. Enhancements incorporated in the Tactical Tomahawk's design include in-flight retargeting, the ability to loiter over the battlefield and attack emerging targets, and target identification and damage assessment capabilities. In addition, the missile will employ GPS guidance.

**Standard Missiles.** The Standard Missile (SM) is the Navy's primary surface ship area air defense weapon. The newest variant of the Standard system—the SM-2 Block IVA—has the dual mission of defeating both advanced antiship cruise missiles and theater ballistic missiles. The FY 2001 budget continues low-rate initial production of SM-2 Block IVA missiles on a schedule that will allow the system to achieve initial operational capability and enter full production in FY 2003. Pending the Block IVA's deployment, the budget provides for continued procurement of SM-2 Block IIIB missiles.

**Ship Self-Defense Systems.** Modernization of ship self-defense systems continues under the Maritime Force Protection program. This program includes the Evolved Sea Sparrow Missile (ESSM), the Rolling Airframe Missile (RAM), and the Re-architecture NATO Sea Sparrow Missile System. The FY 2001 budget begins production of the ESSM and continues RAM procurement. New 11-round RAM launchers will be installed on guided missile cruisers as part of the cruiser conversion program. They will replace the Close-In Weapon System currently employed by these ships. Reflecting the results of an analysis of ship-based radar systems conducted in 1999, the Navy has increased development funding for both the multifunction radar and the volume search radar, to be installed on CVN-77 and DD-21s. These systems are also being considered for backfit on LPD-17 amphibious ships during the next decade.

**Cooperative Engagement Capability (CEC).** The CEC system collects radar data from multiple ships and aircraft and distributes this information to each ship in a battle group. This enables vessels to engage cruise missiles at ranges well beyond their radar horizons, significantly enhancing the chances of defeating advanced ASCM threats. A series of land-based tests will be conducted in FY 2000 to identify solutions to problems that have occurred in integrating CEC with other ship defense systems. Near-term efforts focus on fixing interoperability and software maturity problems. An operational evaluation of CEC interoperability is planned for the spring of 2001. The FY 2001 budget supports CEC/E-2C integration efforts to ensure that this critical airborne sensor portion of the CEC network is deployed as scheduled.

**Light Airborne Multipurpose System (LAMPS).** The FY 2001 budget continues initiatives to extend the service life of SH-60B LAMPS helicopters and equip them with improved sensors and weapons. The upgraded helicopters, renamed SH-60Rs, will incorporate a modern dipping sonar, a multimode radar, and other upgrades, enhancing their effectiveness and survivability in littoral environments.

**Naval Surface Fire Support (NSFS).** Naval surface fire support capabilities are being modernized in order to expand support for joint land-attack operations. Based on the results of analyses conducted in 1999, the missile portion of the NSFS program has been restructured to address near- and long-term requirements. The FY 2001-2005 program funds development of the Land Attack Standard Missile as the near-term solution for deployment on Aegis ships. To address longer-term NSFS needs, an advanced land-attack missile will be acquired for deployment on DD-21s and possible incorporation on Aegis ships. This missile will be developed under an aggressive multi-team competition to be conducted in FY 2001-2002. The FY 2001 budget increases funding for the Advanced Gun System, a 155mm weapon that can reach a range of 100 nautical miles, also slated for fielding on the DD-21. In addition, the FY 2001 budget funds procurement of a 5"/62mm gun capable of employing extended-range guided munitions; the gun will be installed on Aegis cruisers and on DDG-81 and later Aegis destroyers.

**Information Technology 21st Century (IT21).** Under the IT21 program, the Navy is accelerating the fielding of shipborne computer networks supporting both warfighting and other requirements. The networks provide secure and unclassified Internet protocol access for naval forces through satellite and other communications means, using commercial hardware and software. As ships implement IT21, battle groups will be better able to coordinate their actions by sharing a common tactical picture.

### Land Forces

**Army.** The FY 2001-2005 program marking the start of a major transformation of the Army is designed to realize the Army's vision for fielding a more versatile, lethal, and survivable force. The Army will accomplish this transformation by combining digitization initiatives that have been a key part of its modernization program for several years with accelerated development of advanced technologies for propulsion, protection, and direct and indirect fire. Overall, the Army's program will create a more responsive force; accelerate procurement of weapon systems that make light forces more lethal; accelerate procurement of computerized logistics systems to facilitate deployment and sustainment of Army forces; and sustain key elements of the existing force until the transformation is complete.

A major near-term element of the transformation effort is the immediate establishment of an initial force of two brigades at Fort Lewis, Washington. These units, which initially will use off-the-shelf loaned equipment, will develop tactics, techniques, and doctrine associated with the operational employment of redesigned forces. Following demonstrations and selection this spring, the Army will begin procuring off-the-shelf Medium Armored Vehicles (MAVs) for the interim force. The MAVs will be used first to replace the loaned equipment at Fort Lewis and subsequently to equip other brigades within the Army. Plans call for interim brigades to be fielded at a rate of about one per year beginning in FY 2001. The units fielded will come from both the active and reserve components. Concurrently, the Army will develop a Future Combat System (FCS) with advanced capabilities for introduction around FY 2012.

The transformation plan calls for the accelerated procurement of weapons to make lighter forces more lethal. Examples of such systems include the lightweight 155mm howitzer, the Line-of-Sight Antitank (LOSAT) weapon, and the High-Mobility Artillery System (HIMARS). Additionally, the Army will sustain key legacy systems pending completion of its transformation initiative by continuing modernization of the M1 tank, accelerating procurement of the CH-47F cargo helicopter and the UH-60L+ Blackhawk helicopter, continuing the Heavy Expanded Mobility Tactical Truck Extended Service Program, and initiating procurement of the Heavy Equipment Recovery Combat Utility Lift System (Hercules).

To improve strategic responsiveness, procurement of key logistical command and control systems will be accelerated. These systems will improve preparation and execution of movement plans, ensure integration with joint logistical systems, and provide a capability to track shipments in transit. Programs to be accelerated include the Global Combat Support System-Army, the Combat Service Support Control System, the Movement Tracking System, and the Transportation Coordinators Automated Information for Movement System II.

The Army is also continuing its efforts to equip the first digitized corps (III Corps) by 2004. Digitization entails the incorporation of state-of-the-art computers, software, and digital radios throughout the force structure and in key warfighting platforms, such as the M1 Abrams tank and the M2 Bradley fighting vehicle. Initiatives in this area will enable critical, time-sensitive information to be disseminated rapidly throughout the battlefield, thus permitting overwhelming combat power to be brought to bear rapidly at the right time and location. Anticipating the enhanced capability that digitization will provide, the Army has redesigned its mechanized divisions, reducing their size and making them more deployable while maintaining their combat capabilities.

**Marine Corps.** Marine Corps modernization programs are driven by the concept of Operational Maneuver From the Sea. Executing this concept will require adaptive and agile forces able to rapidly reorganize and reorient across a broad range of missions and operational environments. Potential modernization initiatives have been tested in the Hunter Warrior and Urban Warrior experiments and will continue to be evaluated in the Capable Warrior series of advanced warfighting experiments. Major ongoing Marine Corps modernization programs funded in the FY 2001 budget include the V-22 aircraft, the Advanced Amphibious Assault Vehicle, and the Marine Corps version of the Joint Strike Fighter.

### GROUND COMBAT SYSTEMS

**Abrams Tank Upgrade.** Three versions of the Abrams tank are currently in service—the original M1 model, dating from the early 1980s, and two newer versions, designated M1A1 and M1A2.

The Army is pursuing two programs—the M1A1D and the M1A2 System Enhancement Program (SEP)—to provide Abrams tanks with digital command and control ($C^2$) capabilities. The M1A1D adds an applique computer to existing M1A1 tanks to provide the processor and memory necessary for digital command and control. Between FY 2001 and FY 2010, the Army will complete its programmed retrofit of 1,535 M1A1 tanks into the M1A1D configuration. The M1A2 SEP upgrades M1A1 and early M1A2 tanks to the latest M1A2 configuration. SEP enhancements include second-generation forward-looking infrared (FLIR) sensors, improved armor, and computer processor and memory upgrades required by the Army's future $C^2$ software. Between FY 2001 and FY 2010, the Army will retrofit all 627 of its older M1A2 tanks with SEP features and complete modification of 547 M1A1 tanks to the M1A2 SEP configuration. All tanks in III Corps will be M1A2 SEPs.

Additionally, under the Abrams Integrated Management XXI program, the Army is overhauling its remaining M1A1 tanks to reduce their operating and support

costs. Funds have been programmed to increase overhaul rates to 135 per year during FY 2001-2005.

Finally, the Army had planned to use the M1 chassis as a platform for the M1 Grizzly Breacher and the Wolverine Heavy Assault Bridge. These programs were terminated in order to free resources for the transformation effort.

**Bradley Fighting Vehicle Upgrade.** The A3 upgrade to the Army's Bradley fighting vehicle system is a major component of the Army digitization initiative, designed to complement M1A2 SEP capabilities while incorporating additional enhancements needed to meet future requirements. Upgraded Bradleys will be fielded to units with M1A2 SEP tanks, and will be able to share battlefield data with those units. Digitization upgrades will improve both situational awareness and sustainability through automated fault reporting and diagnostics. The A3 upgrade will also increase the Bradley's lethality by adding an improved fire control system and a commander's independent thermal viewer with a second-generation FLIR. Approximately 1,100 earlier-model Bradleys will be remanufactured into A3s. All Bradley infantry fighting vehicles in III Corps will be A3s.

**Crusader.** This new system consists of a self-propelled howitzer and resupply vehicles. Fully automated, computerized, and designed for use on the digital battlefield, the Crusader offers substantial improvements in lethality, range, and mobility over existing artillery systems. It is slated to replace the M109A6 Paladin self-propelled howitzer and the M992 field artillery ammunition supply vehicle. The Army is restructuring the Crusader program in order to improve the system's indirect fire support capability and reduce its overall weight. The weight reduction will be attained primarily through changes to the suspension and power plant and through the use of wheeled as well as tracked ammunition supply vehicles. The acquisition objective for the system has been reduced to fewer than 500 units, sufficient to equip III Corps.

**Advanced Amphibious Assault Vehicle (AAAV).** The AAAV will replace the Marine Corps' AAV7A1 amphibious assault vehicle, which is well beyond its originally projected service life. The AAAV will allow Marine forces to launch assaults from points over the horizon, move rapidly to the beach, and continue the attack inland. It also will provide armor-protected transport and direct fire support to Marine infantry forces ashore. The AAAV will have much greater mobility in the water than the AAV7A1, and will have the speed and cross-country mobility to operate with the Marine Corps' M1A1 tanks. Development is continuing under a demonstration and validation contract awarded in 1996. Production is scheduled to begin in FY 2004, with a total of 1,013 vehicles planned for procurement. To bridge the gap until the AAAV's deployment, the Marine Corps is extending the service life of a portion of the existing AAV7A1 fleet. The service life extension program will equip the AAV7A1 with the engine and suspension of the Bradley fighting vehicle and replace many aging components, thereby increasing reliability and maintainability while reducing maintenance and repair costs.

**Lightweight 155mm Howitzer.** This new towed cannon system is programmed for fielding by both the Army and Marine Corps. Substantially lighter than the M198 howitzer that it will replace, the LW155 will significantly enhance ship-to-shore mobility, while increasing the survivability and responsiveness of artillery support for ground operations. The howitzer will incorporate an Army-developed digital fire control system with a self-locating capability, further enhancing operational effectiveness. Currently in engineering and manufacturing development, the LW155 is scheduled to enter production in FY 2003. Plans call for procurement of 724 howitzers, with initial operational capability achieved in FY 2003. Fielding will be completed in FY 2006.

**Future Combat System (FCS).** The Army's force transformation initiative has as its cornerstone a medium-weight combat vehicle designed to be more strategically mobile than current systems, while remaining highly lethal and effective. This new vehicle will evolve in tandem with the development and fielding of the redesigned force. In the near term, off-the-shelf MAVs will be procured for the initial and interim force. These vehicles will be in the 20 to 25-ton weight class and will be deployable by C-130 aircraft. The near-term goal is to provide the necessary mobility, protection, firepower, and capacity to fight, survive, and conduct operations independently or as part of a combined-arms team. For the longer term, the Army will develop a family of FCS vehicles for the transformed force. FCS will provide capabilities to conduct direct combat, deliver line-of-sight or near-line-of-sight munitions, perform reconnaissance, and transport personnel and material.

*AIRCRAFT*

**Comanche Helicopter.** The Comanche is a key component of the Army modernization program. Designed for armed reconnaissance and incorporating the latest in

stealth, sensors, weapons, and advanced flight capabilities, Comanche helicopters will be electronically integrated with other components of the digitized battlefield. They will provide the operational capabilities essential for a smaller, joint integrated force structure. Enhancements incorporated in the Comanche system will give these helicopters greater mobility, lethality, versatility, and survivability than predecessor systems at lower operating and support costs. The first flight test of a Comanche helicopter was conducted in 1996, and research and development will continue throughout the FYDP period. The first Comanche unit will be fielded in FY 2007, with a total of 1,213 helicopters planned for production through FY 2025.

**V-22 Osprey.** This tilt-rotor aircraft, being developed to replace the Marine Corps' aging fleet of CH-46E and CH-53D helicopters, represents a significant advance in technology for providing tactical mobility to ground combat forces. The V-22's combination of range, speed, and payload is a critical enabler for the modernized force. The Marine Corps plans to procure 360 MV-22 aircraft at a rate projected to reach 28 aircraft per year by FY 2003. Separate acquisition programs include 50 CV-22s modified for Air Force special operations and up to 48 HV-22s for the Navy. Initial operational capability for the MV-22 is slated for FY 2001.

**Apache Longbow and Longbow Hellfire Missile.** The remanufacture of the Apache system will provide ground commanders with a long-range helicopter capable of delivering massed, rapid fire in day or night and in adverse weather. Longbow's target acquisition system can automatically detect and classify targets. The target acquisition system incorporates a fire control radar (FCR) that uses millimeter-wave technology to direct the Longbow Hellfire missile. The fire-and-forget capability of the Longbow system provides an enhancement that is critical to the survivability and effectiveness of its launch platform. Production of the first AH-64D Apache Longbow was completed in March 1997, and initial operational capability was achieved in November 1998. Plans call for production of 530 aircraft, 500 of which will eventually incorporate the FCR and upgraded engines.

**UH-1Y/AH-1Z Upgrade.** The Marine Corps is making extensive improvements to its aging fleets of UH-1N utility and AH-1W attack helicopters. A total of 280 aircraft—100 UH-1Ns and 180 AH-1Ws—will be remanufactured beginning in FY 2002. The upgraded systems, redesignated UH-1Ys and AH-1Zs, will incorporate significant improvements in operational capability. The remanufacturing program also will reduce life-cycle costs (through reliability and maintainability enhancements), while extending the aircraft's service life. The program is currently in engineering and manufacturing development; procurement is slated to begin in FY 2002.

*MISSILES AND MUNITIONS*

**Army Tactical Missile System (ATACMS).** The ATACMS is a surface-to-surface guided missile capable of striking targets beyond the range of existing Army cannons and rockets. This advanced weapon and the Multiple-Launch Rocket System are fired by the M270 delivery platform. A total of 1,647 ATACMS Block I missiles were procured through 1997. An improved version, designated ATACMS Block IA, will offer greater range and, with an embedded GPS receiver, greater accuracy as well. A total of 552 of these missiles are programmed for production. Block II ATACMS missiles, carrying the Brilliant Antiarmor Submunition (BAT), are slated for fielding beginning in FY 2001. The extended-range Block IIA missile has been terminated in order to free resources for higher-priority transformation efforts.

**Brilliant Antiarmor Submunition.** The BAT uses advanced acoustic and infrared sensors to seek, identify, attack, and destroy armored vehicles. ATACMS will deliver a single warhead carrying 13 BAT submunitions deep into enemy territory. The submunitions will autonomously disperse to attack their targets, allowing multiple engagements by a single missile. A preplanned product improvement program will add stationary targets—including multiple-rocket launch systems and Scud missile transporters—to the basic BAT target set through seeker and warhead enhancements. Together, the BAT and ATACMS systems will provide superior deep-strike capability to Army forces. BAT entered low-rate production in December 1999.

**Sense and Destroy Armor Munition (SADARM).** This top-attack submunition, delivered by 155mm artillery projectiles, is designed to destroy lightly-armored vehicles, primarily self-propelled artillery. Once dispensed from its warhead carrier, SADARM orients itself, then scans and detects its target using dual-mode millimeter-wave and infrared sensors. Operational tests of the submunition in 1998 yielded disappointing results. As a consequence, the Army is restructuring the program and is developing improvements to the system design.

65

**Javelin.** The Javelin is a medium-range, man-portable, fire-and-forget missile with day-and-night capability and an advanced tandem warhead capable of defeating modern main battle tanks, including those with reactive armor. The system includes two major components: a reusable command launch unit (CLU) sight system and the missile. Other enhancements incorporated in the Javelin's design include the ability to fire the missile safely from covered fighting positions and to use the CLU sight separately for battlefield detection and surveillance. Javelin began full-rate production in May 1997. The Marine Corps plans to procure 2,553 missiles through FY 2001, while the Army will acquire 19,805 missiles through FY 2003.

**Predator Short-Range Assault Weapon.** This new fire-and-forget top-attack system will improve the Marine Corps' short-range antitank capability in the field. A 20-pound weapon with a disposable launcher, Predator will use an inertially-guided autopilot to increase its accuracy. The system is currently in engineering and manufacturing development, with production slated to begin in FY 2001. A total of 18,190 Predator weapons will be acquired, including 6,706 during the FYDP period. Full operational capability is anticipated in FY 2011.

**Line-of-Sight Antitank (LOSAT) Weapon.** This system consists of kinetic-energy missiles (KEM) and a second-generation FLIR television acquisition sensor mounted on a High-Mobility Multipurpose Wheeled Vehicle (HMMWV) chassis. The KEM is designed to defeat all projected future armored vehicles as well as hardened targets, such as bunkers and reinforced urban structures. It will be readily deployable and capable of being air-dropped or slingloaded for helicopter transport. Initial production is planned for FY 2004.

**High-Mobility Artillery System (HIMARS).** The HIMARS is a C-130-transportable, truck-mounted, general-support rocket system designed for use by early-entry forces. Essentially a wheeled multiple-launch rocket system, HIMARS will provide high-volume artillery capability for initial-entry operations. Fielding of this system is slated to begin in FY 2005.

*SUPPORT SYSTEMS*

**Digitization.** The Army is continuing plans to field advanced information technologies throughout the force. Key initiatives include procurement of platforms (upgraded M1 tanks and Bradley fighting vehicles plus command and control vehicles) with built-in digital information-exchange capability. For critical systems

that do not incorporate digital technologies, the program provides add-on capabilities, called applique sets. The use of appliques enables the Army to provide an interim digital capability for selected systems currently in the inventory, such as the M1A1, M2A2, Paladin, Avenger, and Fox.

The core of the digitization initiative is command and control equipment and software. $C^2$ acquisitions include the improved Single-Channel Ground-Air Radio System, the Enhanced Position Locating Reporting System, the Warfighter Information Network, and the Global Broadcast Service. Related initiatives include Force XXI Battle Command Brigade and Below, which will link maneuver elements of brigades and battalions; the Army Tactical Command and Control System (comprising the Maneuver Control System, All-Source Analysis System, Advanced Field Artillery Tactical Data System, Forward-Area Air Defense Command and Control System, and Combat Service Support Control System), connecting division and corps maneuver assets with intelligence, fire support, air defense, and logistics elements; and the Global Command and Control System-Army, which will link Army forces with other U.S. forces.

Annual investments in digitization over the FYDP period will average $1 billion for system upgrades to improve digital communications throughput; $850 million for $C^2$ programs; $700 million for data-link improvements in reconnaissance, surveillance, targeting, and acquisition systems; $500 million for embedded computer additions to platforms like the M1A2, M2A3, and Comanche; and $250 million for doctrinal development and training on digital equipment. About $3.6 billion has been allocated annually for all aspects of the approximately 100 programs that make up the digitization effort.

Force XXI is the Army's concept for modernizing its forces to meet the challenges of the 21st century. Digitization is a key component of Force XXI. The hardware, software, and doctrinal changes supporting digitization are being evaluated in Army warfighting experiments. Building on a series of tests conducted in 1996-1998, a Digitization Capstone Exercise is scheduled for 2001. The exercise will be conducted in two phases over the spring and fall of that year. The insights gained from warfighting experiments continue to guide Army digitization efforts.

**Family of Medium Tactical Vehicles (FMTV).** Under this program, the Army is fielding a complete family of medium tactical trucks and companion trailers. The

vehicles share a common cab and chassis as well as common engines and transmissions, fuel systems, suspensions, and steering systems. With their off-road mobility and other performance enhancements, FMTV vehicles offer a significant improvement over the older 2 1/2-ton and 5-ton trucks they replace. Their modern design likewise affords improved crew visibility, safety, and comfort relative to previous truck systems. The FMTV will be produced in eight models—cargo, tractor, wrecker, shop van, expandable van, dump, fuel, and water tanker—with companion trailers. The high degree of commonality among the variants will reduce production costs and operations and maintenance expenditures. Since 1996, approximately 9,521 trucks have been delivered to the Army.

A few of the FMTVs currently in service have experienced drive train failures at high speeds while carrying light loads. The Army imposed a speed restriction for highway operations pending resolution of this problem. The correction, involving installation of redesigned and strengthened power train parts, began in 1999. Once the trucks have been retrofitted with the new parts, the speed restriction will be lifted and the fleet will be cleared for unrestricted operations.

**Medium Tactical Vehicle Replacement (MTVR).** Under the MTVR program, the Marine Corps is replacing its medium tactical truck fleet with new trucks. MTVRs will be used to move troops, equipment, and supplies. Each truck will be capable of carrying more than 7 tons off-road and up to 15 tons on the road. Built for a service life of 22 years, the MTVR fleet will incorporate numerous enhancements, including an electronically controlled engine/automatic transmission, an independent suspension, a central tire inflation system, antilock brakes, traction control, and improved safety/ ergonomic features. Plans call for the production of 6,854 trucks, with initial operational capability achieved in FY 2001.

**Logistics Command and Control Systems.** In support of its transformation effort, the Army is accelerating the acquisition of selected logistical C$^2$ systems. The Global Combat Support System-Army will provide access to logistical information from the tactical through the strategic level. It constitutes the Army's interface with the Global Command and Control System. The Combat Service Support Control System will provide an automated means of supporting logistical, medical, financial, and personnel planning and decision making. The Movement Tracking System will provide visibility into all cargo shipments, enabling two-way

communication and the redirection of in-transit material. The Transportation Coordinators Automated Information for Movement System II will facilitate the preparation and execution of movement plans at the unit level. These systems are either being fielded now or will enter the inventory over the next several years.

## Mobility Forces

The FY 2001 budget and associated FYDP continue an ambitious modernization program for mobility forces. The program is designed to replace obsolete equipment with more capable and efficient systems, while adding capacity in selected areas to meet mobility objectives.

### AIRLIFT AND AERIAL REFUELING

**C-17.** Airlift investments over the FYDP period focus on replacing the aging fleet of C-141 intertheater aircraft with state-of-the-art C-17s. The current multiyear acquisition contract will result in procurement of 120 C-17s by FY 2003, with the last of those aircraft projected for delivery in FY 2005. The Department plans to purchase additional C-17s in coming years to ensure that U.S. mobility forces possess the operational flexibility to respond to the full spectrum of crises.

Recent operations have highlighted the C-17's versatility in performing a variety of airlift missions. During Operation Allied Force, the C-17 fleet flew more than 50 percent of strategic airlift missions, while maintaining a departure reliability rate of 97 percent. Within the area of operations, the C-17 fleet demonstrated its inherent flexibility for intratheater use by transporting materiel from NATO bases to an austere Albanian airfield. The C-17's large payload, rapid offload capability, and ground maneuverability enabled it to deliver up to 1,150 tons of urgently needed cargo per day to NATO forces in Albania.

**C-5.** Current investments in the C-5 force focus on avionics modernization and selected engine modifications. Incorporating technological advances in cockpit avionics will improve the C-5's operational capability, while enabling the force to meet more restrictive airspace management criteria slated to take effect in future years. The Air Force is investigating the feasibility of making additional upgrades to the C-5 force that would improve aircraft reliability and availability.

**KC-135.** The KC-135 tanker force also is being modernized. All KC-135 aircraft will receive avionics upgrades, allowing a reduction in cockpit crew size from three to two persons. In addition, 45 KC-135s will be reconfigured to accommodate one of 33 multipoint

refueling pod sets, enhancing their ability to refuel Navy, Marine Corps, and allied aircraft.

**C-130J.** As part of the Department's efforts to modernize the C-130 fleet, the FY 2001 budget provides procurement funding for two Air Force C-130Js and two Marine Corps KC-130J tankers. The upgraded C-130J model incorporates a redesigned flight station that will allow the cockpit crew to be reduced. In addition, the new model features a modern-technology engine and propeller system and an integrated digital avionics subsystem.

**Global Air Traffic Management.** Approximately $2.7 billion has been programmed in FY 2001-2005 for cockpit modernization efforts. These funds will be used to equip mobility aircraft with updated communications, navigation, and surveillance systems. A principal goal of this initiative is to ensure that these aircraft comply with worldwide airspace access criteria, known as Global Air Traffic Management (GATM). Compliance with GATM criteria is necessary to preserve the worldwide deployment capability of U.S. forces, avoid delays, and improve airspace management.

**Large Aircraft Infrared Countermeasures.** The FY 2001 budget provides the military airlift fleet with a new countermeasure system designed to foil heat-seeking surface-to-air missiles. This program will enhance the survivability of large aircraft operating in high-risk environments.

### *PREPOSITIONING*

The FY 2001-2005 program continues investments in Air Force prepositioning of air base operation sets in Southwest Asia. The funding plan provides for the reconstitution of sets used to support contingency operations as well as for accelerated procurement of additional sets to enhance responsiveness in major crises.

### *INFRASTRUCTURE AND SUPPORT*

Numerous airfields, ports, and other transportation facilities support the movement of U.S. military personnel and equipment to destinations worldwide. The Army's Strategic Mobility Program funds improvements to domestic rail, highway, port, and airfield facilities. In addition, DoD maintains airfield facilities overseas for refueling, maintenance, and other en route support. Today, DoD operates about one-third the number of overseas airfields that it did a decade ago. Therefore, it is increasingly important to keep these facilities in good operating order and, in some cases, to enhance their capability. Complementing these improvements are continued investments in the Global Transportation Network. Funding programmed over the FYDP period will strengthen command and control capabilities, thus facilitating the tracking of personnel and cargo and enhancing the utilization of transportation resources.

## CONCLUSION

U.S. conventional forces continue to evolve to meet 21st century requirements. The FY 2001 President's Budget and associated FYDP increase funding for operational readiness as well as for critical facilities and modernization. These actions, in conjunction with initiatives to reduce operating costs, are intended to ensure that the modernization programs planned for FY 2001-2005 can be executed and that the funding target of $60 billion in annual procurement expenditures in FY 2001 is achieved. In fact, programmed expenditures meet that target in FY 2001 and exceed it each year thereafter. The Department's modernization programs and associated operational initiatives for conventional forces emphasize and, where possible, accelerate high-payoff programs that will ensure U.S. dominance over any potential military threat.

| Table 12 |
|---|
| **Web-Based Resources** |

| For additional information on systems described in the Investment and Force Structure sections, please visit the Web sites for the respective Services at the addresses listed below: | |
|---|---|
| Navy Fact File | http://www.chinfo.navy.mil/navpalib/factfile/ffiletop.html |
| Marine Corps Fact File | http://www.hqmc.usmc.mil/factfile.nsf/AVE?openview&count=3000 |
| Army Weapon System Handbook | http://www.sarda.army.mil/sard-zs/saal_zs_public_docs/wsh.html |
| Air Force Fact Sheets | http://www.af.mil/news/indexpages/fs_index.html |

# Chapter 6

# NUCLEAR FORCES AND MISSILE DEFENSES

Nuclear forces and missile defense are critical elements of U.S. national security and will remain so into the future. Strategic forces continue to provide a credible and a highly valuable deterrent. The United States remains committed to appropriate and jointly agreed upon reductions in strategic nuclear forces, but will protect options to maintain its strategic capabilities at START I levels until the START II Treaty has entered into force. The Administration also believes it is necessary to protect the United States, its forces abroad, and its friends and allies from the effects of chemical and biological weapons and the missiles that can deliver them. The United States has a comprehensive strategy for countering such threats. The structure of the theater and National Missile Defense (NMD) programs meets present and projected future missile threats, provides the best technology to meet these threats, and is fiscally prudent.

## STRATEGIC AND THEATER NUCLEAR FORCES

Nuclear forces are an essential element of U.S. security, serving as a hedge against an uncertain future and as a guarantee of U.S. commitments to allies. Accordingly, the United States must maintain survivable strategic nuclear forces of sufficient size and diversity—as well as the deployment of theater nuclear weapons to NATO and the ability to deploy cruise missiles on submarines—to deter or dissuade potentially hostile foreign leaders with access to nuclear weapons.

The United States continues to work toward further agreed, stabilizing reductions in strategic nuclear arms. Once the Treaty on Further Reduction and Limitation of Strategic Offensive Arms (START II) has entered into force, the Department is confident that it can maintain the required deterrent at the force levels envisioned in a future treaty (START III), as agreed to in the March 1997 Helsinki Summit and reinforced at Cologne, Germany, in June 1999.

### START Treaties

The START I Treaty entered into force on December 5, 1994. The United States and Belarus, Kazakhstan, the Russian Federation, and Ukraine, the four successor states that continued to be bound by the rights and obligations of the former Soviet Union under START, are working to achieve the final phase of nuclear force reductions mandated by that treaty by December 2001. The Treaty on Further Reduction and Limitation of Strategic Offensive Arms (START II), approved by the U.S.

Senate in January 1996, has not yet entered into force because the Russian Federation has yet to ratify the treaty. START II calls for reductions in aggregate force levels, conversion or elimination of multiple-warhead intercontinental ballistic missile (ICBM) launchers, elimination of heavy ICBMs, and a limit on deployed submarine-launched ballistic missile (SLBM) warheads. It will eliminate the most destabilizing strategic nuclear systems—multiple warhead ICBMs—and will reduce deployed strategic nuclear warheads by about two-thirds from Cold War levels. The original START II Treaty called for the parties to complete the final reduction phase no later than January 1, 2003.

At their March 1997 meeting in Helsinki, President Clinton and Russian President Yeltsin issued a joint statement establishing parameters for future reductions in nuclear forces beyond START II. In this statement, the Presidents agreed to an overall limit of 2,000-2,500 deployed strategic warheads for a future START III Treaty.

They also agreed to extend the deadline for elimination of strategic nuclear delivery vehicles under START II to December 31, 2007, but stipulated that systems to be eliminated under START II must be deactivated by December 31, 2003, subject to START II entering into force, by removing their nuclear warheads or other joint agreed steps. The Presidents further agreed that negotiations would begin on a START III Treaty immediately after Russian ratification of START II.

These agreements were formalized in a Joint Agreed Statement and a Protocol to the treaty in New York in September 1997, extending the time period for full implementation of START II until December 31, 2007. In addition, letters were signed and exchanged recording the Helsinki Summit commitment to deactivate, by December 31, 2003, the U.S. and Russian strategic nuclear delivery vehicles that under START II will be eliminated. START II entry into force will require approval by the Russian parliament and ratification by both parties of the Protocol to the START II Treaty and its associated Joint Agreed Statement.

At the G-8 summit held in Cologne, Germany, in June 1999, Presidents Clinton and Yeltsin again agreed that both governments would do everything in their power to facilitate the ratification of START II, and further agreed that discussions on START III and the Anti-Ballistic Missile (ABM) Treaty would begin in late summer 1999.

| | | | Table 13 |
|---|---|---|---|
| **Reductions in U.S. Strategic Nuclear Arsenal Force Levels FY 1990 Through 2007** | | | |
| | FY 1990 | FY 2000 | START I (December 5, 2001) | START II (December 31, 2007) |
|---|---|---|---|---|
| ICBMs | 1,000 | 550 | 550 | 500 |
| Attributed Warheads on ICBMs | 2,450 | 2,000 | Not over 2,000 | 500 |
| SLBMs | 568[a] | 432[b] | Not over 432 | 336 |
| Attributed Warheads on SLBMs | 4,864[a] | 3,456[b] | Not over 3,456 | Not over 1,750 |
| Ballistic Missile Submarines[d] | 31[a] | 18[b] | Not over 18 | 14 |
| Attributed Warheads on Ballistic Missiles | 7,314[a] | 5,456[b] | Not over 4,900 | Not over 2,250 |
| Heavy Bombers[d] | 324 | 113[c] | 95[c] | 95[c] |

[a] Excludes five decommissioned submarines (and their associated missiles and warheads) that were still START accountable.

[b] Excludes two Benjamin Franklin-class (Poseidon missile) (SSBNs) converted for Special Operations Forces that are still START accountable.

[c] Excludes 93 B-1s that are devoted entirely to conventional missions. B-1s are still accountable as a nuclear bomber under START I, but would not be accountable under START II.

[d] Specific systems numbers are not mandated by treaty. Force structure results from allocation of resources and mission requirements.

Since establishment of the Cooperative Threat Reduction (CTR) program in 1991, the United States has been assisting Russia, Ukraine, Belarus, and Kazakhstan in implementing nuclear force reductions required under the START I Treaty. In anticipation of further reductions mandated by the START II Treaty and in potential support of a negotiated START III Treaty, the United States is starting to discuss additional CTR projects with Russia.

## Force Structure and Capabilities

Until START II enters into force, the United States is protecting options to maintain a strategic nuclear arsenal at essentially START I levels. Accordingly, the FY 2000 budget request included an additional $104 million to sustain the option of continuing START I levels of strategic nuclear forces. If START II is implemented as amended by the START II Protocol, accountable warheads will be reduced by the end of 2007 to a level of 3,000-3,500, of which no more than 1,750 may be carried on SLBMs. Strategic nuclear delivery vehicles that will be eliminated under START II will be deactivated by December 31, 2003, providing the benefits of a reduced force structure four years prior to the agreed 2007 date for full elimination.

### LAND-BASED INTERCONTINENTAL BALLISTIC MISSILES

At the end of FY 2000, the United States will have 500 Minuteman III ICBMs and 50 Peacekeeper missiles. To meet the overall START I warhead limits, some of the Minuteman missiles have been downloaded to carry only one reentry vehicle (RV). Once START II enters into force, the United States will modify all Minuteman III missiles to carry only one warhead and will retire all Peacekeepers. In this transition, DoD will redeploy the Mark 21 RV, currently deployed on Peacekeeper, on a portion of the single RV Minuteman force. Mark 21 RVs contain features that further enhance nuclear detonation safety and reduce the risk of plutonium dispersal in the unlikely event of a fire or other mishap.

The United States is not currently developing or producing any new ICBMs. However, the Air Force has begun exploratory tasks to plan for a replacement to the Minuteman III around 2020. This makes it difficult to sustain the industrial base needed to maintain and modify strategic ballistic missiles. To maintain the Minuteman ICBM system and to preserve key industrial technologies needed to sustain ICBMs and SLBMs, the budget

provides funding to replace guidance and propulsion systems, as well as to preserve a core of expertise in the areas of reentry vehicle and guidance system technology.

### SEA-BASED BALLISTIC MISSILES

The SSBN fleet has reached its planned total of 18 Ohio-class submarines. The first eight Ohio-class submarines each carry 24 Trident I (C-4) missiles; the final 10 are each equipped with 24 Trident II (D-5) missiles. The SSBN fleet's survivability and effectiveness are enhanced through the D-5 missile's improved range, payload, and accuracy. The FY 2001 budget provides for continued procurement of D-5 missiles to support the conversion of four SSBNs from the C-4 to the D-5 missile system. Backfits during regularly scheduled ship depot maintenance periods will begin in late 2000. The United States will retain 14 SSBNs armed with D-5s, while the four oldest Ohio-class SSBNs will be eliminated or converted to serve in a non-nuclear role. D-5 missiles aboard the 14 boats, capable of carrying eight warheads apiece, will be downloaded consistent with START limits. The budget also supports Navy planning for a life extension to the D-5 SLBM in order to align missile life to the recently extended Trident submarine service life of 42 years.

### HEAVY BOMBERS

The U.S. bomber force consists of 93 B-1s, 94 B-52s, and 21 B-2s. The Air Force plans to reduce the number of B-52s to 76 in FY 2001. Fourteen B-2s, all deployed at Whiteman Air Force Base, Missouri, are Block 30 configuration aircraft. The remaining seven B-2s are being upgraded to Block 30 configuration; six are to be delivered in FY 2000. The twenty-first aircraft is being used for flight testing upgrades and will complete Block 30 modification in FY 2002. B-2 and B-52 bombers can perform either nuclear or conventional missions. The B-1 force is dedicated to, and has been equipped exclusively for, conventional operations.

## Readiness

Selected elements of U.S. strategic forces maintain the highest state of readiness to perform their strategic deterrence mission. A credible and effective nuclear deterrent requires proper support for all of its components: attack platforms, other weapons systems, command and control elements, the nuclear weapons stockpile, research and development capabilities, the supporting industrial base, and well–trained, highly motivated people.

U.S. ICBMs and SLBMs on day-to-day alert are not targeted against any specific country. The missiles, however, can be assigned targets on short notice. The United States maintains two full crews for each SSBN, with about two-thirds of operational SSBNs routinely at sea. On average, about one to two U.S. SSBNs are undergoing long-term overhauls at any given time and are not available for immediate use. All 550 ICBMs, with the exception of a few undergoing routine maintenance, are maintained on a continuous day-to-day alert. The bomber force is no longer maintained on day-to-day alert status, although it can be returned to alert status within a few days if necessary.

## Stockpile Stewardship

The President declared that maintenance of a safe and reliable nuclear weapon stockpile is a supreme national interest of the United States. The Department of Energy's Stockpile Stewardship Program (SSP) is the primary means of ensuring safety and reliability in the nuclear deterrent, absent nuclear testing. SSP develops new tools to supplant nuclear explosive testing as the means to provide confidence in the nuclear stockpile obtained in the past from nuclear explosive testing. There was high confidence in the current stockpile when the United States entered into a nuclear testing moratorium in 1992. Since that time, the SSP, principally its surveillance program, has uncovered problems associated with aging. Through SSP, an understanding of these problems and programs to address them has been developed through a combination of information from past underground tests and early benefits of SSP. The SSP still faces challenges; but as long as it continues to get needed resources, it will keep pace with the complex problems likely encountered in the future. Should annual certification reveal a problem that can only be resolved by nuclear explosive testing, the Secretary of Defense will inform the President and Congress of the need to resume nuclear testing.

## Funding and Modernization

Funding for strategic nuclear forces—ICBMs, SLBMs, and nuclear bombers—has declined in recent years, as has the fraction of the total defense budget devoted to nuclear forces. A few modernization programs for strategic forces are currently underway: B-2 modifications, primarily for conventional missions; D-5 missile procurement; and Minuteman III life extension activities.

With most nuclear modernization efforts complete, programs to sustain nuclear forces and their readiness now account for most of the strategic nuclear funding.

## Theater Nuclear Forces

As reaffirmed by NATO in its April 1999 Strategic Concept, theater nuclear forces, in the form of dual-capable aircraft, in the United States and deployed to NATO are an essential link between strategic nuclear and conventional capabilities. They also contribute to the spectrum of retaliatory options to deter aggression. The United States will continue to maintain these weapons in NATO, but at levels significantly below Cold War levels. Nuclear weapons capability on surface ships has been eliminated, but the capability to deploy Tomahawk Land Attack Missiles armed with a nuclear warhead on submarines has been maintained.

## Comprehensive Test Ban Treaty

On October 13, 1999, the U.S. Senate rejected the Comprehensive Test Ban Treaty (CTBT). Nevertheless, the President stated that the United States would not abandon it. Rather, he stated he fully intends that the United States will eventually ratify the treaty. Accordingly, the Administration will work with the Senate to ensure that the merits of the CTBT are well understood and to address Senators' legitimate concerns.

The President also reaffirmed U.S. policy of maintaining a moratorium on nuclear explosions, a policy that has been in place since 1992. The other nuclear weapon states also have policies of not conducting any nuclear explosions, pending CTBT entry into force. The United States will continue to urge the nuclear weapon states to maintain the moratorium on nuclear testing that they have declared and all other states to show similar restraint.

The purpose of the CTBT is to ban all nuclear explosions and thus help constrain nuclear proliferation. The CTBT cannot prevent proliferation. However, the prohibition of all nuclear explosions will help make it more difficult for states possessing nuclear weapons to improve existing types or to develop advanced new types of nuclear weapons.

The CTBT would prohibit only nuclear explosions. It would not prohibit stockpile stewardship activities the United States needs to carry out to maintain its nuclear deterrent. Such activities include non-nuclear testing,

subcritical experiments, preparations to resume full-scale nuclear testing, computer modeling and simulation of nuclear explosions, and any other stockpile maintenance activities not involving a nuclear explosion. Similarly, the treaty would not prohibit design, development, production, and remanufacture of nuclear weapons.

## MISSILE DEFENSES

The proliferation of nuclear, biological, and chemical (NBC) weapons and the missiles that can deliver them pose a major threat to the security of the United States, its allies, and friendly nations. Over 20 countries possess or are developing NBC weapons, and more than 20 nations have theater ballistic missiles (TBMs) or cruise missiles to deliver them. Some of these countries are pursuing capabilities for much longer-range ballistic missiles. The U.S. missile defense program reflects the urgency of this immediate threat, both with its Theater Air and Missile Defense (TAMD) programs and its NMD program, to develop as quickly as possible a highly effective defense system against emerging rogue state strategic ballistic missiles. Finally, the Department is continuing development of technology to improve ballistic and cruise missile defense systems.

### Role of Missile Defense in U.S. Defense Strategy

The U.S. defense strategy for the 21st century seeks to shape the international security environment in ways favorable to U.S. interests, respond to the full spectrum of threats, and prepare for an uncertain future. Missile defense is a key component of this strategy. Missile defenses may contribute to the reduction and prevention of missile proliferation and strengthen regional stability by undermining the utility of ballistic missiles to potential aggressors, both critical for shaping the international security environment. Theater missile defenses (TMD) are key to protection of deployed forces as they act in defense of U.S. national security interests. Additionally, the U.S. ability to provide missile defense protection to allies and friends, in conjunction with the extended deterrent from the U.S. nuclear umbrella, may contribute to reducing the desire of many states to acquire NBC weapons and ballistic missiles since this blunts the coercive effect of such systems.

At the same time, missile defenses are essential for responding to growing ballistic and cruise missile threats. The threat of missile use in regional conflicts has grown substantially. The potential combination of NBC weapons with theater-range missiles poses very serious challenges to U.S.-led coalition defense efforts in the event of a major theater war. Hostile states possessing theater missiles armed with NBC weapons may threaten or use these weapons in an attempt to deter or otherwise constrain U.S. power projection capability. Such threats could intimidate allies or friends and discourage them from seeking U.S. protection or participating in coalitions with the United States. Even small-scale theater missile threats, coupled with NBC weapons, dramatically raise the potential costs and risks of military operations. Effective theater missile defenses will ensure that the United States is prepared to confront regional instability or conflict successfully in such an environment.

### National Missile Defense Program

The NMD program has anticipated for some time the possibility that a rogue state could acquire ICBMs that could threaten the United States. This possibility was underscored by the August 1998 North Korean attempt to launch a satellite on a Taepo Dong-1 (TD-1) missile. The launch demonstrated some important aspects of ICBM development, most notably multiple-stage separation. While the Intelligence Community expected a TD-1 launch for some time, it did not anticipate that the missile would have a third stage or that it would be used to attempt to place a satellite in orbit. A three-stage variant of the TD-1, if successfully developed and deployed, could pose a threat to portions of the United States as well as to the territory of U.S. allies and friends.

The Intelligence Community's current view, however, is that North Korea is more likely to develop the Taepo Dong-2 (TD-2) missile as a weapon. The TD-2 is a derivative of TD-1 technology, employing a larger first stage and the No Dong theater ballistic missile as the second stage. A two-stage TD-2 will have the range to reach Alaska, while a three-stage variant could bring most of the lower 48 states within range of North Korean ballistic missiles. The Intelligence Community believes North Korea could test a TD-2 at any time, unless it is further delayed for political reasons. Other rogue nations, particularly Iran, could test an indigenously developed ICBM in the latter half of this decade, using foreign assistance. These nations may also pursue a TD-type ICBM, possibly with North Korean assistance or purchase such a North Korean system outright, in the next few years.

The NMD system being developed would defend the United States—all 50 states—against a small number of

intercontinental ballistic missiles launched by a rogue state.

In 1999, the Department made significant progress on the NMD program, including the completion of Environmental Impact Statements for interceptor sites in Alaska and North Dakota, as well as a successful intercept test in October 1999. The second intercept test was conducted on January 18, 2000. Although the actual intercept was unsuccessful, a significant amount of data was collected that will be used to continue and enhance program development. A third intercept test is scheduled for late April or early May. These events are preparing the Department for the Deployment Readiness Review in June 2000, after which the President will determine whether to deploy the NMD system. No deployment decision has yet been made—that will depend on the technological readiness and operational effectiveness of the proposed system at the Deployment Readiness Review, the projected cost, a review of the threat, and the international security situation, to include arms control.

Although no deployment decision has been made, the President, based on the recommendation of his national security team, decided, for planning purposes, on an architecture for the NMD system. The FY 2001 budget request continues to demonstrate the Administration's funding commitment to National Missile Defense, and includes all funding necessary through FY 2005 to deploy an NMD system. The deployment, if approved, will proceed in phases. As an immediate goal to meet early threats, the Department would deploy by 2007, with an initial capability in 2005, an NMD system that would be optimized for the most immediate threat—that from North Korea. It would be capable of defending all 50 states against a launch of a few tens of warheads accompanied by simple penetration aids. The system would also be capable of defending the United States from a handful of warheads from other rogue states. For planning purposes, this first-phase NMD architecture would include 100 Ground-Based Interceptors deployed in Alaska; an X-Band Radar deployed at Shemya, Alaska; upgrades to five existing ballistic missile early warning radars; and a combination of the Defense Support Program and the Space-Based Infrared Satellite-High satellite systems.

The NMD development program will continue to be conducted in compliance with the Anti-Ballistic Missile Treaty. NMD deployment would require modifications to the treaty. The Administration has begun to engage the Russians and allies on the need to change the ABM Treaty to permit deployment of a limited NMD system.

## Theater Air And Missile Defense Programs

In light of the widespread deployment of theater ballistic missiles today, the Department's immediate missile defense priority is to develop, procure, and deploy TAMD systems to protect key facilities and forward-deployed elements of the U.S. armed forces, as well as allies and friends. This plan envisions time-phased acquisition of a multi-tier, interoperable ballistic missile defense system that provides defense in depth against theater ballistic and cruise missiles. The Ballistic Missile Defense Organization and the Joint Theater Air and Missile Defense Organization share the responsibility for developing an improved capability to defend against air and missile threats. The increased emphasis on interoperable air and missile defenses has led to a family of systems concept. A key aspect of the family of systems approach is to leverage the synergy among air, ballistic, and cruise missile defenses, and to integrate various systems in a comprehensive effort to defeat the threat. This concept calls for a flexible combination of integrated, interoperable TAMD systems capable of coalition joint theater operations. It includes several individual weapon systems, various sensors, and advanced battle management/command, control, communications, computers, and intelligence capabilities.

Lower-tier systems remain the top priority to defeat short-range ballistic missiles. The Patriot Advanced Capability-3 (PAC-3) and the Navy Area Defense systems are the key lower-tier systems for the TAMD mission. PAC-3 will provide air defense of ground combat forces and defense of high-value assets against high-performance, air-breathing, and theater ballistic missiles. The FY 2001 budget begins to procure PAC-3 missiles, with first unit equipped (FUE) projected for FY 2001. Consistent with congressional direction, the program has completed two successful intercepts and is awaiting a final decision before proceeding to low-rate initial production.

The Navy Area Defense program, using a reconfigured SPY-1 phased-array radar and an upgraded version of the Standard Missile (Block IVA) on Aegis-equipped ships, will provide U.S. forces, allied forces, and areas of vital national interest at sea and in coastal regions with an active defense against theater ballistic and cruise missiles. Low-rate initial production of the Block IVA missiles will begin in FY 2001 in support of developmental and operational testing prior to planned FUE

in FY 2003. As of the second quarter of FY 1999, an interim Navy Area Theater Ballistic Missile Defense software capability, Linebacker, was deployed and put into operation on two ships.

The Department has worked with its international partners, Germany and Italy, to restructure the Medium Extended Air Defense System (MEADS), to include a three-year Risk Reduction Effort (RRE). The RRE will allow the Department to take advantage of less costly program options that build on capabilities from existing TMD weapons systems, such as the PAC-3. The NATO MEADS Management Agency awarded a contract to MEADS International (comprised of Lockheed Martin, Damiler Chrysler Aerospace AG, and Alenia Marconi Systems) in November 1999 to begin work on the next phase of the program. The RRE effort will focus on reducing the risk and cost of the critical elements of the systems (i.e., fire control radar and mobile launcher) needed to fulfill the requirements for a highly mobile, rapidly deployable TMD system capable of providing 360-degree coverage for maneuver forces. The Department fully funded the MEADS program by adding $721 million from FY 2002 to FY 2005.

Upper-tier systems—the Theater High Altitude Area Defense (THAAD) system and the Navy Theater Wide program—are designed to intercept incoming missiles at high altitudes in order to defend larger areas, defeat medium- and intermediate-range ballistic missiles, and increase theater commanders' effectiveness against weapons of mass destruction (WMD). THAAD will make possible more effective protection of broad areas, dispersed assets, and population centers against TBM attacks. With two recent successful intercept tests, the Department determined that the THAAD program had met the exit criteria necessary for entering the engineering and manufacturing development phase of acquisition. Based on this decision, an FUE of FY 2007 is anticipated for THAAD.

The Navy Theater Wide system builds upon the existing Aegis Combat System as well as the Navy Area Defense system and is funded to continue Aegis Leap Intercept (ALI) flight testing through FY 2002. The Leap testing program will determine whether a modified standard missile, operating in conjunction with the Aegis weapon system, can intercept a ballistic missile in the exoatmosphere. The ALI flight test results will provide the data necessary to determine whether the program performance supports accelerated development and deployment of the system, which would require additional

funds in FY 2003 and the subsequent fiscal years. Currently the budget provides for continued development through the Future Years Defense Program at approximately $200 million per year.

As an additional layer of missile defense, the Airborne Laser (ABL) will engage ballistic missiles during their boost phase of flight. By terminating powered flight early, ABL causes a missile's warhead to fall short of its intended target. ABL development is paced to accomplish a lethality demonstration against an in-flight ballistic missile in FY 2005.

Cruise missile defenses (CMD) are either evolving from existing systems or are being developed from scratch. The Cooperative Engagement Capability is being used to net together air defense radar systems while investigations of selected ballistic missile defense weapons' elements, such as missile defense sensors; elevated network sensors; battle management/command, control, and communications; and weapons, are underway to adapt and apply them to CMD. The investigations include elements from PAC-3 and Navy Area lower-tier systems. The CMD development strategy is to identify and leverage the synergy possibilities among ballistic missile, cruise missile, and air defense, and to employ them to build-up CMD via an integration of weapons systems into a comprehensive network that can defeat the cruise missile threat. In addition, CMD-focused advanced technology programs are investigating ways to add depth to existing capability, such as shooting down land attack cruise missiles at extended ranges, possibly even over an adversary's territory. One such program is the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS), which will provide a long-endurance, extended range detection and tracking capability required to defeat the land attack cruise missile threat. To position the Department to capitalize on all CMD developments, a collaborative process is underway to devise concepts for joint employment and a TAMD investment plan, including CMD. The combatant commanders in chief, the Services, the Ballistic Missile Defense Organization, and the Joint Theater Air and Missile Defense Organization are participating in this collaborative process.

### Cooperation with Allies, Friends, and Strategic Partners

As part of broader efforts to enhance the security of U.S., allied, and coalition forces against ballistic missile strikes and to complement U.S. counterproliferation strategy, the United States is exploring opportunities for

theater ballistic missile defense cooperation with its allies and friends. The objectives of U.S. cooperative efforts are:

- To provide effective missile defense for U.S., allied, and friendly troops, and for allied and friendly civilian populations.

- To strengthen U.S. security relationships.

- To enhance collective deterrence of missile attacks.

- To share the burden of developing and fielding theater missile defenses.

- To enhance interoperability between U.S. forces and those of allies and friends.

The United States is taking an evolutionary and tailored approach to allied cooperation that accommodates varying national programs and plans, as well as special national capabilities. This approach includes bilateral and multilateral research and development, off-the-shelf purchases, and coproduction of TMD components or entire systems. Furthermore, as part of an ongoing initiative aimed at countering the TBM threat, the United States is sharing early warning data on launches of theater-range ballistic missiles with allies and friends as a means of engendering greater cooperation on theater missile defense.

In its 1991 New Strategic Concept, NATO reaffirmed the risk posed by the proliferation of WMD and ballistic missiles. The Alliance reached general agreement on the framework for addressing these threats. As part of NATO's Defense Capabilities Initiative, allies agreed at the April 1999 Washington Summit to develop Alliance forces that can respond with passive and active measures to protect forces and infrastructure from WMD attack. At the summit, the allies also agreed that extended air defenses are necessary for NATO's deployed forces. A notable achievement in this area was the creation in December 1999 of a trilateral U.S.-Dutch-German TMD planning cell within the U.S.-German extended air defense task force. This cell, building on the enormous success of the Dutch-led optic windmill series of TMD exercises, will ensure interoperability of the three nations' Patriot Forces. For the past several years, DoD has also held discussions with Japan regarding cooperative research in support of developing a TMD capability. Japan recently decided to participate in such cooperative research, which is aimed at proving key technologies that are needed for the Navy Theater Wide program.

U.S. TMD cooperation with Russia is an excellent example of how cooperative approaches to dealing with new regional security challenges of mutual interest, such as the proliferation of ballistic missiles, can advance U.S. security objectives. The United States and Russia have conducted two TMD exercises and agreed to a third, multiple-phase effort. These exercises have provided a practical basis for U.S. and Russian forces to develop agreed procedures to conduct theater missile defense operations during regional contingencies where they could be deployed together.

Additionally, at the September 1998 Summit held in Moscow, President Clinton and President Yeltsin announced a new U.S.-Russian initiative. The two countries agreed to establish a jointly-manned center in Russia for the timely sharing of information on the launches of ballistic missiles and space launch vehicles detected by each sides' early warning systems. The United States and Russia will also establish a voluntary multinational system for prelaunch notification of planned missile launches. These initiatives are designed to minimize the risks associated with dangerous reactions to false warnings of a missile attack.

The United States and Russia also cooperate in several technology programs. For example, the United States remains actively engaged with Russia through the Russian American Observational Satellites program. Other programs, such as the Express/T-160 Thruster Experiment, have the potential to improve U.S. satellite on-board propulsion technology significantly. These programs provide mutual technical benefits and serve as the catalyst for increased cooperation with the Russian Federation in the future.

U.S.-Israeli cooperative programs, including shared early warning on theater missile launches and the development of the Arrow weapon system, assist Israel in developing a ballistic missile defense capability to deter and, if necessary, defend against current and emerging ballistic missile threats in the region. Planned interoperability with U.S. theater missile defense systems will afford Israel a more robust defense. Moreover, the program provides technical benefits for both sides by expanding the theater missile defense technology base and providing risk mitigation for U.S. weapon systems.

### Advanced Technology Development

Activities in the missile defense technology base are key to countering future, more difficult threats. The technology base program underpins the theater ballistic missile defense, cruise missile defense, and NMD programs. Advanced technology development provides

real benefits to the Department's capabilities by reducing development risk in existing and new weapon systems and accelerating the introduction of new technologies via upgrades to baseline programs. Advanced technology development programs provide innovative technologies. Advanced technologies are also being exploited to reduce the cost of future missile defense systems, as well as advancing U.S. capabilities in attack operations, reducing the pressure placed on theater air and missile defense systems.

## CONCLUSION

Nuclear forces remain a critical element of the U.S. policy of deterrence. Although U.S. nuclear forces have been reduced substantially in size and in the percentage of the defense budget devoted to them, strategic forces continue to provide a credible and a highly valuable deterrent. The United States remains committed to appropriate and jointly agreed upon reductions in strategic nuclear forces, but will protect options to maintain its strategic capabilities at START I levels until the START II Treaty enters into force. The Administration is also committed to protecting the United States, its forces abroad, and its friends and allies from the effects of chemical and biological weapons and the missiles that can deliver them. The United States has a comprehensive strategy for countering such threats. The structure of the theater and National Missile Defense programs meets present and projected future missile threats, provides the best technology to meet these threats, and is fiscally prudent.

BLANK   PAGE

# Chapter 7

# MANAGING THE CONSEQUENCES OF DOMESTIC WEAPONS OF MASS DESTRUCTION INCIDENTS

In the event of a terrorist attack or act of nature on American soil resulting in the release of nuclear, biological, chemical, or radiological agents, the local law enforcement, fire and emergency medical personnel who are first to respond may become rapidly overwhelmed by the magnitude of the attack. The Department of Defense has many unique warfighting support capabilities, both technical and operational, which could be used in support of state and local authorities, if requested by the lead federal agency, to mitigate and manage the consequences of such an event. By Presidential direction, DoD and other federal agencies have undertaken a review to examine the federal response to a domestic weapons of mass destruction (WMD) incident.

## DOD'S ROLE IN MANAGING THE CONSEQUENCES OF DOMESTIC WEAPONS OF MASS DESTRUCTION INCIDENTS

### Organization

Due to the increasing volatility of the threat and time sensitivities associated with providing effective support to the lead federal agency charged with WMD consequence management, the Secretary of Defense recently appointed an Assistant to the Secretary of Defense for Civil Support (ATSD-CS) to serve as the Department's focal point for the coordination of DoD efforts in preparation for requests from civilian agencies. To manage the Department's efforts, the ATSD-CS chairs the WMD Preparedness Group, a coordinating body comprised of the Assistant Secretaries for Health Affairs; Reserve Affairs; Special Operations/Low Intensity Conflict; Command, Control, Communications, and Intelligence; and Legislative Affairs; the General Counsel; the Deputy Under Secretaries for Comptroller and for Acquisition, Technology, and Logistics; and senior representatives from the Joint Staff, the Department of the Army, and the Defense Threat Reduction Agency. The DoD WMD Preparedness Group ensures that DoD efficiently marshals its consequence management resources and its many capabilities in support of the lead federal agency in accordance with the Federal Response Plan. The ATSD-CS also represents DoD in the interagency consequence management policymaking body led by the President's National Coordinator for Security, Infrastructure Protection, and Counter-terrorism.

### Domestic Terrorist Threat

The terrorist threat of today is far more complex than that of the past. Violent, religiously and ethnically

motivated terrorist organizations now share the stage with the more traditional, politically motivated movements. State sponsors, including Iran, Iraq, Libya, Syria, Sudan, North Korea, and Cuba, continue to provide vital support to a disparate mix of terrorist groups. As recent history shows, homegrown organizations and disaffected individuals have also demonstrated an increasing willingness to act on U.S. soil. Not only is the threat more diverse, but the increasing sophistication of organizations and their weaponry also make them far more dangerous. The Oklahoma City and World Trade Center bombings demonstrate the devastating effects of conventional explosives in the hands of terrorists. Experts predict that it will not be long before the United States enters a more unconventional era where WMD are used.

A WMD incident in the United States will likely begin as a local event, but may rapidly develop into a national one requiring the support of many federal agencies. Consequence management refers to emergency assistance to protect public health and safety, restore essential government services, and provide emergency relief to governments, businesses, and individuals affected by the consequences of a terrorist incident involving WMD. (See Chapter 2, The Military Requirements of the Defense Strategy, for more information about DoD's overall combatting terrorism program.)

### DoD Principles for Consequence Management

In accordance with Presidential Decision Directives 39 and 62 and the Defense Against Weapons of Mass Destruction Act of 1996, the federal government has taken comprehensive steps to enhance and support state and local authorities in responding to WMD incidents and to minimize their consequences. When requested, the Department of Defense will provide its unique and extensive resources in accordance with several key principles.

First, DoD will ensure an unequivocal chain of responsibility, authority, and accountability for its actions to assure the American people that the military will follow the basic constructs of lawful action when an emergency occurs. To this end, the Assistant to the Secretary of Defense for Civil Support will provide full-time civilian oversight for the domestic use of DoD's WMD consequence management assets in support of other federal agencies.

Second, in the event of a catastrophic WMD event, DoD will always play a supporting role to the Federal Bureau of Investigation and the Federal Emergency Management Agency (FEMA) in accordance with the Federal Response Plan and will ensure complete compliance with the Constitution, the Posse Comitatus Act, and other applicable laws. The Department routinely provides support and assistance to civilian authorities and has considerable experience balancing the requirement to protect civil liberties with the need to ensure national security.

Third, DoD will purchase equipment and provide support in areas that are largely related to its warfighting mission. However, many capabilities can be dual-use. Units specializing in decontamination, medical support, logistics, and communications, for example, could assist in the domestic arena as well.

Fourth, whereas active duty forces are the United States' forward-deployed assets overseas, reserve and National Guard units are the forward-deployed units for domestic consequence management. In the event of a domestic WMD event, certain units would be able to respond rapidly due to their geographic dispersion and proximity to major American cities. Moreover, many of the applicable capabilities such as decontamination, medical support, transportation, and communications are contained in reserve and National Guard units.

## DOD CAPABILITIES FOR CONSEQUENCE MANAGEMENT

As noted above, DoD assets are tailored primarily for the larger warfighting mission overseas. But in recognition of the unique nature and challenges of responding to a domestic WMD event, the Department recently established a Joint Task Force for Civil Support, headquartered at the United States Joint Forces Command, to plan for and integrate DoD's support to the lead federal agency for events in the continental United States (CONUS). This support will involve capabilities drawn from throughout the Department, including detection, decontamination, medical, and logistical assets. The United States Pacific Command and the United States Southern Command have parallel responsibilities for providing military assistance to civil authorities for states, territories, and possessions outside CONUS. The United States Joint Forces Command provides technical advice and assistance to geographic commanders in chief conducting consequence management operations in response to WMD incidents outside CONUS.

Additionally, DoD has established ten WMD Civil Support Teams (formerly called Rapid Assessment and Initial Detection Teams), composed of 22 well-trained and equipped full-time National Guard personnel. Upon completion of training and certification in 2000, one WMD Civil Support Team will be stationed in each of the ten FEMA regions around the country, ready to provide support when directed by their respective governors. Their mission will be to deploy rapidly, assist local first responders in determining the precise nature of an attack, provide expert medical and technical advice, and help pave the way for the identification and arrival of follow-on military assets. By congressional direction, DoD has also established 17 WMD Civil Support Teams to support the U.S. population. (See Chapter 9, Total Force Integration, for more information.)

## OTHER PREPARATORY ACTIVITIES

### Domestic Preparedness Program

The Defense Against Weapons of Mass Destruction Act of 1996 (also known as the Nunn-Lugar-Domenici Act) required DoD to enhance the capability of federal, state, and local (FSL) emergency responders regarding terrorist incidents involving WMD. The Domestic Preparedness Program (DPP) consists of four elements: the City Train-the-Trainer Program, the Exercise Program, the Expert Assistance Program, and the Chemical Biological Rapid Response Team. The 120 city training element provides for the training of senior local officials as well as those who will train emergency first responders; it also includes training equipment loans from DoD. The Exercise Program element, in addition to conducting exercises during the city training program, consists of an annual FSL exercise and execution of the Improved Response Programs. The annual FSL exercise works to improve interaction among federal agencies and departments and further exercises that interaction among federal, state, and local agencies in response to a threat and/or actual WMD incident. The biological FSL exercise scheduled for New York City in September 1999 was postponed due to an outbreak of encephalitis which strained exercise participants. The exercise is being rescheduled for a time in 2000.

The Improved Response Programs effort is a set of individual technical investigations and exercises geared toward gathering information to improve procedures and tactics for responding to WMD incidents. It is focused on enhancing responses to chemical or biological incidents and systematically addresses the response at the federal, state, and local levels. The Expert Assistance Program is composed of the following elements: Helpline, Hotline, Web page, chemical-biological database, and equipment testing program. The final element, the Chemical Biological Rapid Response Team, leverages the capabilities of all the Services in providing the chemical/biological response capability dictated by the Act. DoD will transfer portions of the DPP to the Department of Justice on October 1, 2000.

### International Cooperation

DoD has begun providing limited consequence management advice to U.S. allies and coalition partners to ensure that they are not crippled by a WMD delivered by terrorists or by a neighboring adversary. Consequence management is particularly important in the Northeast Asian and Persian Gulf regions where U.S. military personnel rely upon the ability of the host nation to help mitigate the effects of WMD attacks in order to complete their wartime missions. DoD has also taken a number of steps to improve the protection of its military personnel stationed overseas including measures to safeguard military installations and the anthrax vaccination program, which are described in detail respectively in the chapters on Military Requirements of the Defense Strategy and Readiness in this report.

## CONCLUSION

Consequence management brings together the skills and assets of many government agencies at the federal, state, and local levels. By enhancing America's preparedness, the likelihood that an event will occur, or the consequences if it does occur, will be reduced. The Department of Defense is committed to providing preparatory assistance and stands ready to contribute its unique capabilities when called upon.

BLANK   PAGE

# Chapter 8

# INFORMATION SUPERIORITY AND SPACE

DoD is committed to taking full advantage of opportunities provided by the information age's concepts and technologies in the 21st century. Creating and leveraging information superiority and exploiting the potential of Space are on DoD's critical path to the future. The synergy resulting from the consolidation of Information Superiority and Chief Information Officer (CIO) functions under the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence (ASD(C3I)) continues to yield significant technical, operational, and financial benefits. The consolidation of space policy development and oversight and closer coordination with the Intelligence Community resulted in space concepts being better integrated into defense strategy and processes. These actions create and leverage information superiority.

## INFORMATION SUPERIORITY

### What is Information Superiority?

The information age provides an opportunity to move from an approach to war preoccupied with uncertainty and damage control to one that leverages information to create competitive advantage. The United States currently enjoys a superior information position over potential adversaries by virtue of its ability to collect, process, protect, and distribute relevant and accurate information in a timely manner while denying this capability to adversaries.

This information edge is translated directly into increased effectiveness by enabling emerging network-centric concepts designed to leverage improved situation awareness. Thus, information superiority is reflected in the twin revolutions, the Revolutions in Military Affairs and Business Affairs. These twin revolutions are mutually supportive as improved business processes result in additional resources for combat capabilities increasing the tooth to tail ratio.

### Importance of Information Superiority

Information superiority is the critical enabler of the transformation of the Department currently in progress. The results of research, analyses, and experiments designed to create and leverage information superiority, reinforced by recent experiences in Kosovo, are very encouraging. They demonstrate that the availability of

information and the ability to share it results in enhanced mission effectiveness and improved efficiencies. This evidence points to increased speed of command, a higher tempo of operations, greater lethality, less fratricide and collateral damage, increased survivability, streamlined combat support, and more effective force synchronization.

The ability to move information quickly where it is needed and to create shared awareness provides an opportunity to develop new concepts of operation and approaches to command and control (C$^2$) that are more responsive and provide greater flexibility. To achieve their full potential, these new concepts may require changes in organization, doctrine, material, and the like—changes that need to be co-evolved along with the development of new operational concepts and approaches to command and control. New approaches to command and control include integrating the now separate and sequential planning and execution processes to achieve greater agility and flexibility and the capability for self-synchronizing forces. Based upon a common understanding of the situation and the commander's intent, these forces are able to quickly respond in a coordinated fashion. Information superiority provides enhanced flexibility and agility, allowing U.S. forces to be more proactive and shape the battlefield.

## SPACE

### Role of Space

Space is a medium like the land, sea, and air where military activities are conducted. Space and space-related activities contribute increasingly to the Department's ability to meet its national security objectives. Space forces are global in nature, support a forward presence, are necessary to maintain military readiness, and enable implementation of *Joint Vision 2010* enhanced operational concepts.

DoD issued a new space policy that reflects priorities in the nation's evolving space activities, implements the National Space Policy issued by the President in 1996, identifies needed capabilities, provides guidance to resource allocation, and directs program activities. DoD formulated and led the execution of a space control strategy that initiates technology readiness activities to enhance the surveillance, protection, prevention, and negation missions as well as to unite space control research and development (R&D) and programs.

### Importance of Space

Space power is as important to the nation as land, sea, and air power. Space forces support military operations by providing information lines of communication enabling information superiority, contributing to deterrence, increasing force effectiveness, and ensuring the freedom of space.

### CONTRIBUTION TO INFORMATION SUPERIORITY

Military operations rely heavily upon information lines of communication to, in, through, and from space. Space assets integrate and deliver command, control, communications, computers, intelligence, surveillance, and reconnaissance (C$^4$ISR) capabilities; navigation; and weather so U.S. forces can deny such to an adversary, and enable combatant commanders and operational forces to synthesize information, dictate the timing and tempo of operations, and counter an adversary's ability to exercise command and control.

### CONTRIBUTION TO COMBAT POWER

Space forces contribute to the overall effectiveness of U.S. military forces if deterrence fails by acting as a force multiplier that enhances combat power. The capability to control space will contribute to achieving information superiority and battlespace dominance.

## INFORMATION SUPERIORITY STRATEGY AND GOALS

### Elements of Information Superiority

Information superiority starts with the ability to collect the information needed to support operations. Achieving information superiority requires organizing information into meaningful knowledge contexts, then providing that knowledge reliably and in a timely manner to decision makers. Information, when combined into a coherent picture, experiences a dramatic increase in value. This value is greatly enhanced when it creates a shared awareness. However, this value is not realized until its reaches someone who can use it. The importance of interoperability—the ability of different organizations and systems to share and utilize information—is paramount. Without a comprehensive approach to integrating DoD's information processes and to achieving interoperability across organizations and systems, there will continue to be gaps and barriers that diminish the quality, quantity, and timeliness of information that is available for operations. The promise of shared awareness is in synchronized efforts. Thus,

it is important not only that situation-related information is shared, but also that there is a capability for collaborative decision making and sharing of commander's intent, plans, and implementing actions. These create the conditions necessary to dynamically synchronize actions in response to developing situations and to take advantage of opportunities as they occur.

While the information age created enormous opportunities, it also created significant vulnerabilities for those who depend upon an uninterrupted flow of quality information to support operations. Protecting DoD information and information assets must not be thought of as a luxury but as a basic necessity. Protection must be engineered in from the outset, not added on as an afterthought. As information superiority is a relative concept, operations to degrade, disrupt, destroy, and exploit an adversary's information and information processes are an integral part of achieving, maintaining, and leveraging information superiority.

### Prerequisites for Progress

Harnessing information technologies to create and leverage information superiority requires changes in the way DoD does business. There are three prerequisites necessary for progress—innovation, co-evolution, and the achievement of a critical mass of information infrastructure (infostructure).

#### INNOVATION

Successful innovation depends upon an understanding of the possibilities, the ability, and tools to experiment with new concepts and capabilities, and an acceptance that some innovations will fail. Closer ties between the technical and operational communities are important to provide warfighters with a better understanding of the capabilities and opportunities that emerging information concepts and technologies provide, and to provide systems designers and developers with a better appreciation of operational requirements and environments. Experimental venues that provide opportunities for discovery and that capture empirical data for analyzing the nature and impact of information superiority are essential to facilitate innovation.

#### CO-EVOLUTION

Since changes in the way DoD does business are key to creating and leveraging information superiority, the co-evolution of concepts of operation, command approaches, C4ISR systems, organization, and doctrine must be an integral part of DoD's investment strategy,

and the need for co-evolution must be reflected in experimental venues. Entering the 21st century, information technologies are advancing at unprecedented rates; DoD must be in a position to anticipate and leverage these technologies.

### INFOSTRUCTURE AND TECHNOLOGY INVESTMENTS

The entry fee to an information superiority-enabled future consists of a critical mass of protected information and information processing capabilities, trained personnel, and assured connectivity so warfighters can gain hands-on experience with the power of information and the possibilities of networking. The achievement of information superiority is not a one-time milestone, but rather a continuing process to identify the best that technology has to offer and adapt it to the needs of DoD. Central to this effort is a continuing emphasis on advanced technology, integration of multiple technologies into a coherent capability, and interoperability.

### Making Information Superiority Happen

To ensure that the above prerequisites are in place, DoD is developing appropriate policy and oversight initiatives, actively pursuing opportunities to improve international cooperation in the areas of C4ISR and Space, partnering with industry, and working to anticipate and understand the implications of emerging information technologies.

#### POLICY AND OVERSIGHT

DoD established the Office of the Deputy Assistant Secretary of Defense for Programs and Evaluation to provide an integrated strategic resource perspective on all information superiority programs, to include strategic resource guidance, program assessments, and execution reviews of DoD's information superiority systems and capabilities. The ASD(C3I) has been added as a principal member of the Defense Acquisition Board to ensure consideration of C4ISR-related issues and compliance with the Clinger-Cohen Act by all acquisition programs. Oversight of all C4ISR and Space programs are combined under one overarching integrated product team (OIPT) to provide consistency in acquisition strategies and enhanced information superiority. Oversight of major automated information systems acquisitions remains the responsibility of the Information Technology OIPT.

An Information Management Strategic Plan was developed to support the goals of the Report of the Quadrennial Defense Review, the Defense Reform Initiative,

and *Joint Vision 2010.* Directive memoranda are being used to issue policy guidance quickly to accommodate the fast pace of technological advancements and statutory requirements. (See Appendix J for information on Information Managements goals.)

DoD initiated the development of an Information Superiority Advanced Technology Plan to provide guidance and focus to current and emerging DoD and commercial R&D.

## INTERNATIONAL COOPERATION

The success of future military operations across the spectrum of conflict depends on the ability of the United States and its partners to exchange information quickly unimpeded by technological barriers. Lessons from Kosovo indicate that the inability to share information in a secure, interoperable mode can have adverse mission consequences. DoD is taking concerted action to inform other nations of its plans for the future and to seek opportunities for cooperative developments that will improve interoperability. Where appropriate, multinational fora such as the NATO Consultation, Command, and Control Board and its subcommittees, the Combined Communications Electronics Board, the Quadrilateral $C^3$ Senior National Representatives forum, the NATO Partnership for Peace Program, the Southeast Europe Defense Ministers initiative and the Quadrilateral International Cooperative Opportunities Group are used to engage allies and partners in a productive dialogue and to develop the necessary partnerships. The United States contributes to these efforts by providing technology for command and control, communications, and crisis management, as well as assistance with $C^3$ architecture development and systems engineering. Specific examples of DoD's efforts during 1999 include the creation of a U.S.-French bilateral $C^4$ISR and Space Interoperability Working Group, the NATO Defense Capabilities Initiative, Year 2000 Outreach program, and initiatives in the areas of information assurance (IA), extremely high frequency military satellite communications, battlefield information collection and exploitation, and multifunctional information distribution. DoD also pursued international agreements on remote sensing space cooperation with Italy, Spain, and Japan and protected national security space equities at the UN Conference on Disarmament and Committee on Peaceful Uses of Outer Space.

## PARTNERSHIPS WITH INDUSTRY

DoD works closely with the U.S. defense industry to promote transatlantic industrial teaming and to keep the $C^3$ community apprised of DoD plans and strategies for the future. The benefits of this closer relationship include increased chances for improving interoperability and broader markets, and increased competition leading to more affordable products and insights into the plans of the other nations. The establishment of partnerships between the defense space sector and the intelligence, civil, and commercial space sectors will serve to balance investments, enable the leveraging of scarce resources, and reduce the cost of acquiring, operating, and supporting operational space force capabilities. $C^3I$ led the successful effort to define licensing criteria for commercial hyperspectral imagery, finalized a draft interagency agreement as well as DoD Directive and Instruction on shutter control, assisted the National Oceanic and Atmospheric Administration (NOAA) in its development of a commercial remote sensing enforcement plan, and represented DoD in international consultations on remote mutual restraints with other supplier nations.

## Information Superiority Goals

### ENSURE CONTINUITY OF OPERATIONS THROUGH THE YEAR 2000 TRANSITION PERIOD

The Year 2000 problem (Y2K) involves the inability of some software to function properly after December 31, 1999. It is vital to ensure continuity of mission-essential operations despite Y2K-related problems and disruptions.

### IMPLEMENT EFFECTIVE PROGRAMS FOR ESTABLISHING INFORMATION ASSURANCE AND CRITICAL INFRASTRUCTURE PROTECTION

The Department's defense in-depth strategy protects critical assets and processes needed for mission accomplishment through effective training and certification of personnel, improved security operations, public key infrastructure (PKI), an integrated attack sensing and warning capability, the capability to conduct computer forensics, and the ability to leverage IA/critical infrastructure protection (CIP) technology solutions. DoD must also develop policies to define the use of commercial products and ensure business practices keep pace with electronic capabilities. DoD must work with allies and coalition partners to protect information since, in an interconnected world, this translates into the ability to protect DoD's information and critical infrastructure.

## BUILD A COHERENT GLOBAL INFORMATION GRID

The Global Information Grid is a major initiative that takes an enterprise view of DoD networking, computing, interoperability, and information assurance. It places emphasis on both the importance of information as a strategic resource and the need for greater compatibility of information technology with commander in chief (CINC), Service, and agency mission critical operational processes.

## ACHIEVE END-TO-END C4ISR INTEGRATION

An integrated Joint and Combined C$^4$ISR capability is necessary to ensure that information will be available, relevant, accurate, protected, authenticated, and provided in a useful and timely manner.

## PROMOTE THE DEVELOPMENT OF KNOWLEDGE-BASED WORKFORCE

Improved productivity in the information age depends, in large measure, upon the creation and maintenance of reusable knowledge-bases; the ability to attract, train, and retain a highly skilled workforce; and core business processes designed to capitalize upon these assets. Central to this effort is the employment of a number of strategies aimed at optimizing information sharing, collaboration, and reuse.

## REINVENT INTELLIGENCE FOR THE 21ST CENTURY

Getting needed intelligence information to decision makers in a timely and useful manner is essential for information superiority. Leveraging new technologies will alter warfighting concepts and place greater demands on intelligence, requiring new collection and processing assets and greater flexibility in intelligence, surveillance, and reconnaissance (ISR) systems. Intelligence challenges will increase as future opponents develop asymmetric strategies ranging from the threatened use of weapons of mass destruction to the exploitation of cyberweapons. The rapid growth in global television broadcasts, the Internet, and personal communications requires a new business model for intelligence to match capabilities with a changing environment.

## STRENGTHEN INFORMATION OPERATIONS, SECURITY, AND COUNTERINTELLIGENCE

Foreign intelligence services are focused on obtaining the Department's secrets and critical program information. DoD is committed to updating policies and programs, developing a more aggressive posture to employ Information Operations (IO) and counter foreign threats, protecting against trusted insider misconduct, and rationalizing security requirements such that necessary information sharing among coalition partners can occur while continuing to protect against the improper release of information.

## PROMOTE ELECTRONIC COMMERCE AND BUSINESS PROCESS CHANGE

In order to realize the gains associated with information age technologies, DoD is committed to developing and implementing new ways of doing business that are designed to leverage the power of information and is committed to using electronic business/electronic commerce principles, processes, and technologies as the primary means of transacting its business.

## FOSTER DEVELOPMENT OF AN ADVANCED TECHNOLOGY PLAN FOR INFORMATION SUPERIORITY

The convergence of disparate technologies into a package that has operational utility will not come about by accident. Therefore, DoD is developing an advanced technology plan for information superiority to rationalize investments, coordinate and leverage research, and focus efforts on high priority areas.

## CREATE AN INFORMATION SUPERIORITY TEAM

The tenth goal enables the above nine goals by creating the necessary organizational processes, knowledgeable workforce, and teamwork within DoD to create and leverage information superiority.

# CREATING THE INFOSTRUCTURE

## The Infostructure Vision

The quality of DoD's infostructure will be the pacing item on the journey to the future. The ability to conceive of, experiment with, and implement new ways of doing business to leverage the power of information age concepts and technologies depends upon what information can be collected, how it can be processed, and the extent to which it can be distributed. The ability to bring this capability to war will depend upon how well it can be

secured and its reliability. DoD envisions an infostructure that is seamless with security built-in, one that can support the need for increased combined, joint, and coalition interoperability, leverages commercial technology, and accommodates evolution.

### SEAMLESS AND COHERENT

To facilitate the end-to-end flow of information necessary to support network-centric operations, information processes must be transparent to users. DoD systems must transition from isolated stovepiped environments to a seamless and coherent infostructure. This requires the establishment of a Department-wide mechanism for gaining visibility into the many separate planning, budgeting, acquisition, operations, and maintenance activities that contribute to DoD's information systems and processes. DoD's Global Information Grid is designed to achieve this by creating a DoD-wide network management solution, comprised of enterprise network policies, strategies, architectures, focused investments, and network management control centers that bring order out of the currently, highly fragmented Service-centric DoD information infrastructure.

### BORN JOINT AND COALITION

Future operations will be joint or multi-Service, include reserve components, and most likely involve partnerships with other countries to form a coalition. Their effectiveness will depend not only upon the ability of DoD to share information and collaborate internally but externally as well. Therefore, interoperability must be considered a key element in all DoD operational and systems architectures. Experience shows that after the fact interoperability fixes are costly, do not satisfy mission requirements, and create security problems. Success is achieved by incorporating interoperability from the start.

### LEVERAGES COMMERCIAL TECHNOLOGY

The engine driving advances in information technologies is in the commercial sector. DoD benefits from the enormity of the commercial marketplace for information technology which drives down the costs of off-the-shelf capabilities, fuels an unprecedented rate of improvement in cost/performance, and makes interoperability easier to achieve. As a result, DoD now can reap the benefits of private sector investments, saving scarce R&D dollars to invest in militarily significant areas that the commercial sector is not addressing. The downside is that the latest technology is now available to potential foes and allies alike.

### SECURITY BUILT IN

Security, like interoperability, must be incorporated into systems designs from the beginning to be effective and affordable. Security must be co-evolved with approaches to interoperability since new/revised links among systems increases vulnerabilities. While DoD's continuing migration from analogue to digital systems will facilitate efforts, there will always be legacy systems and systems that coalition partners use that lack adequate security. DoD is exploring approaches to deal with these exceptions, however, these will in all likelihood entail limiting the functionality and utility of these nonconforming systems.

### ACCOMMODATES EVOLUTION

Change is the constant of the information age. DoD infostructure must be designed to accommodate rapid change as both requirements and technologies evolve. A comprehensive strategy that consists of appropriate architectures, standards, design principles, configuration management, and regression testing will be incorporated into DoD's infostructure processes.

## Infostructure Policy Initiatives

### PORTFOLIO MANAGEMENT

DoD is transitioning from a system-based IT management and oversight process to one based upon capability-based portfolios. A Portfolio Management and Oversight Working-Level Integrated Product Team was created to ensure that IT investments are directly linked to DoD mission, warfighter, and functional goals and outcomes; that they result in measurable improvements to DoD mission-related and administrative processes; and that the processes and systems are compliant with the Clinger-Cohen Act and related reform legislation.

### ARCHITECTURES FOR JOINT VISION 2010

An integrated national security architecture is being developed to eliminate unnecessary vertical stovepiping of programs, minimize unnecessary duplication of missions and functions, achieve efficiencies in acquisition and future operations, provide strategies for transitioning from existing architectures, and thereby improve support to military operations and other national security objectives. This integration effort includes the various sources of intelligence and space capabilities. Thus, the ISR communities will be able to more efficiently access and exploit information from multiple sources as well as to integrate the end-to-end intelligence cycle to provide timely, relevant information products to warfighters.

## DEFENSE MEGACENTERS

Defense megacenters, based in the continental United States, process combat and combat support requirements for warfighters deployed around the world. DoD has substantially reduced the cost of this processing by modernizing and consolidating 194 Service and Defense Agency Information Processing Centers into five Defense megacenters with 19 regional support activities providing local computing and information technology support.

## *Infostructure Programs*

### GLOBAL INFORMATION GRID

The Global Information Grid is an enterprise view of DoD networking, computing, interoperability, and information assurance consisting of a globally interconnected, end-to-end set of information capabilities, associated processes, and personnel for collecting, processing, storing, disseminating, and managing information on demand to warfighters, policy makers, and support personnel. The Global Information Grid includes all owned and leased communications and computing systems and services, software (including applications), data, security services, and other associated services necessary to achieve information superiority including the information component of weapons systems.

### GLOBAL COMMAND AND CONTROL SYSTEM

The Global Command and Control System provides near real-time situational awareness with integration of imagery and intelligence data, indications and warning, collaborative planning, course-of-action development, and intelligence mission support needed to accelerate operating tempo and conduct successful military operations. During FY 1999, significant improvements were made in the areas of security, Y2K compliance, infrastructure upgrades, and new and improved functionality.

### SPECTRUM MANAGEMENT

The use of high technology weapons, communications, radio navigation, surveillance, and satellite control systems resulted in the Department's increased reliance on access to the electromagnetic spectrum and the need for a more integrated approach to spectrum allocation. DoD co-located the Services' Frequency Management Offices to improve coordination, defined roles and responsibilities for new and evolving spectrum management offices, updated major regulations, established spectrum management processes for special access programs, established formal training courses, conducted an analysis of the impacts of spectrum reallocation to military operations and national security, and established partnerships with key allies to ensure critical spectrum access in global operations.

### GLOBAL COMBAT SUPPORT SYSTEM

The Global Combat Support System (GCSS) provides a strategy for achieving information interoperability across combat support functions, and between combat support and $C^2$ functions. GCSS incorporates personnel, logistics, finance, acquisition, medical, and other support in a cross-functional environment. In FY 1999, GCSS provided the capabilities to access, integrate, and fuse the combat support picture, giving field commanders a total picture of the battlefield and combat support pipeline.

### DEFENSE INFORMATION SYSTEM NETWORK

The Defense Information System Network (DISN) is DoD's consolidated worldwide enterprise-level telecommunications infrastructure. It is transparent to its users, facilitates the management of information resources, and is responsive to national security and defense needs under all conditions in the most efficient manner. A two-tier pricing structure for the DISN is designed to gain economy of scale, increased security, and interoperability. Its goal is to provide marketplace user rates and component incentives for using DISN network service.

Accomplishments during FY 1999 include enhanced protections making the DISN more resistant to hostile attack and helping to ensure DoD's ability to wage network centric warfare.

### DEFENSE MESSAGE SYSTEM

DoD's primary means of messaging communications (AUTODIN) will be replaced by the Defense Message System (DMS). A flexible, commercial-off-the-shelf (COTS)-based network-centric application layer system, DMS provides multimedia messaging and directory services using the underlying network and security services of the DII. DMS will interoperate with existing messaging systems during the transition.

### JOINT INTEROPERABILITY TEST COMMAND

The Joint Interoperability Test Command (JITC) reduces risk to the warfighter by ensuring compatibility,

integration, and interoperability throughout the life cycle of DoD C$^4$I systems. During FY 1999, JITC certified U.S. forces' platforms for Tactical Data Information Link (TADIL) A/B/J conformance, completed TADIL interoperability certification/validation tests, conducted the largest Y2K test event in DoD on logistics systems, provided solutions to CINCs' operational problems, and provided Y2K operational evaluation support.

## PROTECTING DOD'S INFORMATION AND INFOSTRUCTURE

### Y2K

The Department of Defense, being the largest organization in the nation, faces significant information technology challenges in its efforts to ensure the continuity of critical missions and systems in the face of Y2K-related problems. Over one-third of all mission critical computer systems in the federal government are within DoD. DoD treated the Year 2000 problem as if it were a cyber attack directed at the very core of its military capability—at the ability to obtain, process, and control information. Securing systems for 2000 provided numerous lessons that will translate well to efforts in securing the critical information infrastructure in the future.

Y2K efforts have led to the best ever accounting of DoD systems and status. The information management structure now in place meets the requirements of the Clinger-Cohen Act. The enormous effort and awareness of IT generated by the Year 2000 problem has resulted in significant progress across the board in information superiority.

### Information Assurance

Information Assurance, a critical component of DoD's operational readiness, ensures that the DII is capable of providing continuous and dependable service. IA depends on the continuous integration of personnel, operational, and technical capabilities to guarantee the availability, integrity, authenticity, confidentiality, and nonrepudiation of information services, while providing the means to efficiently reconstitute these vital services following an attack

In August 1998, DoD created the Joint Task Force-Computer Network Defense (JTF-CND), with a mission of coordinating and directing the defense of DoD computer systems and computer networks including the coordination of DoD defensive actions with non-DoD government agencies and appropriate private organizations. In June 1999, the JTF-CND reached its full operational capability. Effective October 1, 1999, the Commander in Chief, United States Space Command, was assigned the responsibility for Computer Network Defense (CND). Detailed studies are underway to identify core functions and develop an integrated, defense-wide, enterprise CND policy and assignment of responsibilities.

In May 1999, the Deputy Secretary of Defense issued the defense-wide PKI policy that requires the use of a common, integrated DoD PKI to enable security services at multiple levels of assurance, provides a solid foundation for IA capabilities across the Department, and mandates an aggressive approach in acquiring and using a PKI that meets DoD requirements for all information assurance services.

### Critical Infrastructure Protection

CIP addresses the protection of the critical assets and infrastructures DoD relies upon to accomplish its mission. A CIP Plan went into effect in January 1999 to ensure an integrated approach to CIP. The ASD(C3I) was designated the Department's Chief Infrastructure Assurance Officer (CIAO), and senior DoD executives have been designated as CIAOs for each infrastructure. The Department began development of an analytic and assessment capability for the Defense infrastructures, leveraging existing capabilities which had been focused on commercial infrastructures. The ASD (C3I) has also been designated at the Functional Coordinator for National Defense, responsible (under Presidential Decision Directive 63) for coordinating all the CIP-related national defense activities of the U.S. government, ensuring that the comprehensive approach DoD is applying to its internal infrastructures is supported nationally and internationally by the other federal departments and agencies as well as allies and coalition partners.

### Security

DoD needs security policies and programs that pace the revolutionary changes in technology and combat on the modern battlefield. Policies must focus on providing protection based on assessments of threats and the danger and consequences of compromise for the most critical and vulnerable information, systems, capabilities, people, and facilities. The Department requires an

active security paradigm that includes the following steps:

- **Establish Criticality.** Identify what must be protected and determine the protection requirements, analyze what is required to accomplish the mission, assess protective and deterrence systems, determine vulnerabilities to the threat environment, establish a degree of assurance to determine acceptable risk.

- **Prepare.** Reduce the threat by establishing a high level of assurance in the trustworthiness and reliability of people, practices, systems, and programs.

- **Protect Assets.** Control asset sharing, isolating information and capabilities based on need-to-know; mitigate known operational deficiencies and vulnerabilities; employ a defense in-depth strategy; and employ new technology to enforce or support security policy.

- **Detect.** Actively seek potential isolated and correlated threats or problems, particularly that may result in future malicious or anomalous activity.

- **Respond.** React to isolated or correlated anomalous or malicious activity, fix technology-based problems and correct suspected and actual unacceptable behavior using sound personnel and security management practices, seek legal or other management remedies as appropriate and when necessary.

- **Strengthen Foundation.** Refine security policy constructs, programs, and practices to anticipate the changing threat environment; deconflict security requirements to foster information sharing while maintaining need-to-know; strengthen personnel management practices to provide a motivated, skilled, and security-responsive workforce; establish and maintain mission-related performance measures; develop standards of professional competence for security practitioners and enhance awareness and training to ensure information is tailored for the designated audience.

Developing and implementing a new vision of security in the information age requires recognition of the globalization of the defense industrial base and the closer integration of foreign countries in defense production. These trends will require changes in the existing security paradigm.

The Department established a single office within the Office of the Secretary of Defense responsible for CI, Security, IA, CIP, and IO to ensure a coherent approach to these issues; established the Defense Information Assurance Program to better integrate the information assurance requirements and budgets of the DoD components, implemented a new certification process for systems administrators; and contributed personnel to the National Infrastructure Protection Center.

The Department implemented the Information Assurance Vulnerability Alert process that disseminates information threat warning and remediation messages throughout DoD and monitors implementation of countermeasures, issued new guidance for Web pages to prevent inadvertent disclosure of sensitive information, and established a Joint Web Risk Assessment Cell to monitor compliance.

## *Counterintelligence*

The CI and security challenges confronting DoD have never been greater. DoD is expanding support to critical technology protection, developing a new CI Risk Based Methodology, enhancing support to force protection, and combating terrorism. DoD has established a Joint CI Training Academy, a Computer Forensics Laboratory, and a computer investigations training program; stood up a classified project to combat terrorism; created a joint CI evaluation office; and started a joint CI assessment group to coordinate CI protection.

## ENABLING THE WARFIGHTER

Information superiority for the warfighter requires that the right information is collected, processed, protected, and distributed to create shared awareness and that the tools are provided to facilitate command and control. DoD has made significant progress in each of these areas.

## *Intelligence, Surveillance, and Reconnaissance*

Over the next decade, total ISR capability will be melded into a system-of-systems architecture which ties national/theater/tactical sensors, commanders, and shooters together to enable U.S., allied, and coalition forces to strike rapidly and decisively at extended ranges.

### *IMAGERY INTELLIGENCE*

DoD has significantly progressed toward the next generation Imagery Intelligence (IMINT) capability by modernizing airborne platforms, improving sensors, and accelerating unmanned aerial vehicle (UAV)

investments. With the award of Future Imagery Architecture, the Department has made significant progress implementing the next generation satellite IMINT capability. The Department is aggressively promoting the use of commercial imagery satellite capability in conjunction with national collection assets and associated value added products and services. The Advanced Synthetic Aperture Radar System (ASARS) Improvement Program for the U-2 fleet provides all-weather, day/night imaging, increased area coverage, improved imagery resolution, geolocation sufficient for precision-guided munitions, and a moving target indicator (MTI) capability.

The National Imagery and Mapping Agency is leading the effort to modernize tasking, processing, exploitation, and dissemination (TPED) of national, airborne, and commercial ISR information. Modernization is required to meet increased demand for precise geolocation, reduced decision cycle timelines, and significantly increased in collection capability.

The Department is studying ISR capabilities and will factor the results into Service and agency modernization programs. The MTI/IMINT Fusion Study identified opportunities to integrate MTI capability from various platforms, as well as integrating and cross-cueing MTI data with imagery. The Joint Chiefs of Staff are conducting three studies to improve airborne ISR support to the CINCs. The first, with a near-term focus, analyzes current CINC ISR requirements, airborne ISR contributions to satisfying requirements, and options to reallocate airborne assets to best meet current overall peacetime and wartime requirements. The second, with a longer-term (2010) focus, addresses airborne platform and sensor IMINT and Signals Intelligence (SIGINT) requirements, capabilities, migration options, and investment strategies for FY 2002 to FY 2007. The third addresses ISR capabilities needed to support military operations in urban terrain.

### SIGNALS INTELLIGENCE

DoD continues investments to ensure the unified commands are able to operate in projected digital and global network environments. The National Security Agency (NSA)-sponsored interagency study, the Unified Cryptologic Architecture for 2010, documented increasing requirements derived from the revolution in information technologies. The cryptologic community joined in an Expanded Corporate Management Review Group to refine and implement a strategy for a Unified

Cryptologic System. The Joint Airborne Signals Intelligence Avionics Family high and low band components completed critical design review in 1999. NSA published a draft Joint Interoperable Operator Network Concept of Operations to enhance multidiscipline tasking, processing, exploitation, and dissemination. In collaboration with the Director of Central Intelligence, the Department allocated additional resources to enhance DoD electronic intelligence collection and analysis capabilities to meet known needs in these areas. Also, in the collaborative effort, a congressionally Direct Action Report was recently completed tasking NSA to continue its efforts in enriching electronic intelligence.

### MEASUREMENT AND SIGNATURE INTELLIGENCE

The Department of Defense, in cooperation with the Community Management Staff, continues to implement the guidance set forth by the Director of Gemini Intelligence to improve United States Measurement and Signature Intelligence (MASINT) activities. The first increment of a project 6-year increase in the resources assigned to the Central MASINT Organization was initiated in FY 2000. The focus of the first year will be on improving support to joint military operations through the creation of MASINT operations and production coordination elements and the implementation of standardized processes and procedures to more efficiently address the needs of MASINT users. DoD is placing particular emphasis on strategies and techniques to strengthen MASINT TPED and increase analytical depth particularly in the arenas of advanced synthetic aperture radar (SAR), radio frequency MASINT, acoustic collections, multi-/hyperspectral information, and nuclear/chemical/biological warfare counterproliferation.

### PLATFORMS

Manned ISR assets continued to be tasked at high levels throughout 1999 supporting peacetime and contingency operations highlighted by the Kosovo conflict. Kosovo operations involved 22 aircraft (seven distinct types) flying over 850 ISR combat support sorties providing 24-hour SIGINT/IMINT collection coverage. The U-2 fleet continues to be improved with upgrades to sensors and aircraft. Initial deliveries for the U-2 ASARS Improvement Program sensor with MTI and SYERS P3I electro-optic/infrared (EO/IR) sensor with multispectral imagery capability are scheduled for FY 2000. The RC-135 Rivet Joint fleet was expanded by two aircraft this year. The upgrade of the fleet to a common baseline configuration provided additional communication capability and connectivity vastly improving

warfighter support. A third RC-135 Cobra Ball aircraft was delivered in 1999, giving the Department a 33 percent increase in airborne MASINT platform capability. The EP-3E program is upgrading connectivity and joint interoperability compliance with the Joint Airborne SIGINT Architecture. DoD expects to field additional tactical reconnaissance assets used so effectively in Kosovo. These systems include the Marine Corps Advanced Tactical Airborne Reconnaissance System (ATARS) for the F/A-18, the Air Force Theater Airborne Reconnaissance System for the F-16, the Navy Tactical Airborne Reconnaissance Pod System for the F-14, and the Navy Shipboard Information Warfare Systems.

The Secretary issued a policy letter giving advocacy and vision to the Department's UAV initiatives. The Global Hawk High Altitude Endurance UAV made excellent progress in the Military Utility Assessment phase of its advanced concept technology demonstration (ACTD). The long dwell capability of this air vehicle will support the warfighters' desire for continuous situational awareness. The Predator Medium Altitude Endurance UAV performed admirably in its support of Kosovo operations flying over 780 flight hours and was also briefly deployed to Kuwait. Predator UAV systems have accumulated over 10,000 flight hours. In early 2000, both the Army and Navy expect to award tactical UAV contracts replacing Hunter and Pioneer. Despite planned program phase-outs, the Hunter and Pioneer UAVs admirably contributed to the Kosovo campaign.

Space assets continued to support both peacetime and conflict operations. The 24-hour all-weather collection coverage was invaluable to the total ISR effort. As the United States Space Command continues to advocate the warfighter's needs, space contributions will continue to be vital toward achieving the national military objectives.

### GROUND/SURFACE SYSTEM SUPPORT

The Services are aggressively migrating ground exploitation and dissemination systems to a distributed, homogeneous network capable of tasking, processing, exploiting, and disseminating multi-intelligence products delivered from multiple platforms and sensors. This effort will significantly reduce the operational footprint for initial entry and follow-on operations, as well as support split-based and joint operations. Multi-intelligence correlation was demonstrated during a Fleet Battle Experiment where the Littoral Surveillance System received and displayed Joint STARS MTI,

acoustic data, SIGINT data, Predator video, and U-2 ASARS Improvement Program EO/IR and synthetic aperture radar data.

### INTELLIGENCE PROCESSING

The proliferation of weapons of mass destruction, the willingness of rogue states to use them, the development of other forms of asymmetrical warfare, and the increasing capabilities terrorist organizations can develop make it imperative U.S. intelligence improve its ability to collect, process, and analyze information. These improvements require additional investments in information technologies to create collaborative work environments and progressive production procedures. A virtual analysis structure that allows quick reaction to fast moving trends, greater agility in the work environment, and the enhanced ability to deliver tailored products and services is required.

Maintaining the integrated capabilities of the Total Force remains essential for the U.S. defense strategy. Defense intelligence agencies will continue to develop and expand to all intelligence disciplines the connectivity strategy underlying the Joint Reserve Intelligence Program (JRIP). The JRIP strategy calls for establishing and maintaining an interoperable, secure system and infrastructure for engaging the military intelligence reserves in operational missions, regardless of individuals' component, duty status, or physical location. Identifying and engaging individuals' skills, especially in foreign language and information technology, will ensure seamless tactical-operational-strategic information/intelligence operations.

DoD will review and evaluate candidate commercial activities for competition to promote efficiency and generate savings for reinvestment into core mission areas. To this end, the Intelligence Community will continue to assess candidate activities, perform cost-comparison analyses, develop reinvestment strategies, and track identified savings.

## COMMUNICATIONS

### Satellite Communications

The Department's Military Satellite Communications future architecture which includes satellites, terminals, and control subsystems will provide users with three general classes of service: protected, wideband, and narrowband. DoD approved strategy to transition from current systems to future architecture includes leveraging commercial satellite communications to the maximum extent possible.

Protected communications services are survivable to ensure warfighter command and control at all levels of combat. The strategy for protecting communications calls for launching four Milstar II satellites by 2002 as planned, followed by the first launch of a more capable Advanced Extremely-High Frequency system in 2006. The failure of Milstar Flight 3 impacted this strategy and a plan for recovering from this loss is still under development.

Wideband communications services rapidly move large quantities of C$^4$I information including intelligence products, video, imagery, and data. DoD's wideband strategy is to launch the four remaining Defense Satellite Communications System satellites supplemented by Global Broadcast Service payloads on Ultra-High Frequency Follow-on (UFO) satellites. Three Wideband Gapfillers will be launched starting in 2004 to reduce the growing gap between tactical wideband requirements and capabilities. A more capable commercial-like Advanced Wideband System is envisioned starting in 2008.

Narrowband communications services provide networked multi-party and point-to-point narrowband links to tens of thousands of rapidly moving warfighters. DoD launched its last UFO satellite in 1999 and plans to supplement the constellation with a satellite in 2003 to maintain the system through 2007. In 2008, the Department plans to launch a UFO replacement system known as the Advanced Narrowband System.

### JOINT TACTICAL RADIO SYSTEM

DoD continues to enhance tactical communications to provide secure, survivable, and interoperable systems for joint and combined operations of conventional forces. The Joint Tactical Radio System was initiated to provide the standard for affordable, high capacity, scalable, interoperable tactical radios to replace all of DoD's current radio inventory, avionics upgrades, appropriate satellite terminals, and personal communications equipment.

### COMMON DATA LINK AND J-SERIES TACTICAL DATA LINKS

The command data link family is DoD's primary wideband data link standard to support air-to-surface transmission of radar, imagery, video, and the sensor information from manned and unmanned aircraft. The DoD's J-series family (of Link-16, Variable Message Format, and Link-22) of low rate tactical data link standards is critical for battlefield awareness for joint and coalition forces. The Joint Tactical Data Link Management Plan is the vehicle overseeing Service migrations to achieve an integrated, predominant, joint forces capability by 2005.

### DIGITIZATION

The Army continues on the road to a digitized force employing information technologies to acquire, exchange, and employ data throughout the battlespace. The Army will equip the First Digitized Division (the 4th Infantry Division at Fort Hood, Texas) by the end of 2000 and the First Digitized Corps by the end of 2004. Army Division XXI efforts encourage innovation and have resulted in a new design for heavy divisions that reduces manpower platform requirements and combat platforms in the maneuver battalions while increasing lethality and survivability.

## Command and Control

### JOINT SURVEILLANCE TARGET ATTACK RADAR SYSTEM

Joint Surveillance Target Attack Radar System is an airborne platform equipped with a long-range, air-to-ground surveillance system designed to locate, classify, and track ground targets in all weather conditions and provide targeting and battle management data to all operators, both in the aircraft and in the ground station modules. Aircraft deployed as part of NATO Allied Force operations met high operating tempo requirements, and provided time-critical information to operational decision makers and combat aircrews. Two E-8Cs were deployed in support of Kosovo operations and data from the 93rd Aircraft Wing reflects outstanding Joint STARS performance—83 of 86 combat support sorties were accomplished with launch reliability of 99 percent, mission effectiveness of 96 percent, and mission capability rate of 80 percent. Production efforts were equally successful with all aircraft on or ahead of schedule.

### COMBAT IDENTIFICATION

Combat identification is the process of attaining an accurate, real-time characterization of potential targets in a combatant's area of responsibility so as to allow the use of weapons or other tactical options. It is essential for overall battle management, operational effectiveness, and reducing fratricide and collateral damage.

Systems employed for combat identification include those using cooperative (i.e., radio frequency question and answer) and noncooperative (e.g., analysis of radar return characteristics) methods, as well as methods which rely on radio reporting of friendly units' geographical positions over a network. DoD's current focus is on improving interoperability between the Services, improving combat identification between ground vehicles, and improving combat identification for close air support and deep strike aircraft missions. A combat identification Capstone Requirements Document is scheduled for completion in FY 2000.

## JOINT AND COALITION INTEROPERABILITY

DoD is developing a comprehensive Joint Interoperability Concept Plan to identify and address specific shortfalls and opportunities in the interoperability of joint and combined forces. Other initiatives designed to improve coalition interoperability include the creation of a C$^4$ISR Coalition Interoperability Multinational Working Group (MNWG) with participants from Australia, Canada, France, Germany, the United Kingdom, and the United States. In May 1999, a MNWG exercise identified impediments and shortfalls to sharing information for coalition collaborative planning and developed recommendations for the October 1999 meeting of senior level C$^3$I national leaders who form the Six-Nation Council. A Coalition Interoperability Concept Plan is being developed to link the various actions, activities, working groups, and forums working interoperability issues among coalition partners while a Coalition Planning and Information Sharing Oversight Integrated Product Team is being formed to leverage ongoing efforts.

## NUCLEAR COMMAND, CONTROL AND COMMUNICATIONS

DoD continues to maintain sufficient survivable and enduring command and control of nuclear weapons. Numerous efforts are underway to sustain and modernize these systems. Correcting Year 2000 problems and developing a process to manage the Year 2000 transition was a high priority. All mission critical systems are projected to be Y2K compliant.

## PERSONNEL RECOVERY

The Directive on Personnel Recovery, June 30, 1997, states that bringing home those who have put themselves in harm's way is one of the highest priorities of the Department of Defense and a moral obligation. Current DoD efforts in this regard are focused on improving Personnel Recovery capabilities for information management, critical communications links, evader location, and intelligence support.

### Integration and Interoperability

DoD made significant advances in planning and implementing joint and combined end-to-end C$^4$ISR and space integration, improving battle damage assessment, close air support, naval surface fire battlefield integration, and theater joint tactical networking.

A Joint Command and Control Integration/Interoperability Group was established to continuously review, oversee, plan, and direct joint integration and interoperability improvements. The Joint C$^4$ISR Decision Support Center (DSC) completed a number of studies to leverage integrated and interoperable C$^4$ISR and improve combat effectiveness. In FY 1999, the DSC analyzed C$^4$ISR requirements for military operations in urban areas, moving target indicator and imagery fusion, IA, and C$^4$ISR impacts on joint interdiction, coalition warfare, and combat operations.

### Information Operations

Information operations support the objectives of the National Security Strategy by enhancing information superiority and influencing foreign perceptions. The Department's emerging concept for IO will be the basis for aligning strategy and policy across DoD. When approved, the strategic concept will guide and integrate IO policy, organization, and implementation and the research, development, and acquisition of IO capabilities.

To protect information, maintain information superiority, and improve preparedness, DoD is employing Red Teams, which are interdisciplinary, threat-based opposing forces to expose and exploit IO vulnerabilities of friendly forces. The Department is preparing policy to standardize the methodology for conducting DoD Red Team operations.

The Department is developing an IO resource baseline to identify DoD component IO-related efforts. This will provide the Department's leadership with great insight into DoD component IO resource, R&D efforts, and organizational focus, allowing greater resource efficiencies and DoD IO program integration.

Based on IO experience in support of Kosovo operations, DoD now has the makings of an IO framework

from which to deal with future coalition/allied warfare issues to achieve/maintain information superiority. DoD education programs continue to be offered and are available to federal and military personnel. IO continues to be integrated into military exercises and wargames.

## Space

### GLOBAL POSITIONING SYSTEM

Given the multitude of military, civil, and commercial Global Positioning System (GPS) users, the newly formed GPS Support Center monitors system performance, provides tactical support to warfighters, and interfaces with key civil agencies that rely on GPS. The GPS continues to mature into a worldwide dual-use positioning, navigation, and timing information resource. The military utility of GPS-enabled precision munitions was illustrated in the conflict in the Balkans. Consequently, integration of GPS into all levels of combat forces remains a high priority. Worldwide civil applications of GPS continue to expand, with new and innovative uses of GPS appearing continuously.

With the growing importance of GPS to military operations and the need to maintain this advantage for friendly forces, the Department's navigation warfare (Navwar) initiative continued on course, and operational requirements for Navwar were formally validated. Navwar efforts, including the recently completed Navwar ACTD, are focused on selecting the most effective solutions for assuring uninterrupted DoD and allied use of GPS, denying access to an adversary, and maintaining GPS service for peaceful purposes outside the theater of operations. DoD is evaluating alternatives and developing a roadmap for modernizing the system to satisfy more demanding military and civil requirements to ensure the continued utility of the system well into the 21st century.

An Interagency GPS Executive Board provided proactive management and oversight of the dual-use aspects of the system. Two new civil signals will be added to future GPS satellites to provide civil users with increased accuracy and robustness and to permit an even broader spectrum of GPS applications.

DoD is supporting a number of international initiatives designed to promote international acceptance of GPS as a worldwide standard, achieve international support for protection of GPS frequency allocations, encourage

growth in the investment and trade of GPS equipment and services, and assure future interoperability.

### SPACE LAUNCH

The effective use of space for military purposes requires reliable and affordable access. U.S. space launch systems differ only slightly from the ballistic missiles developed during the 1950s and 1960s, and are increasingly costly to use. The National Space Transportation Policy balances the efforts to sustain and modernize existing launch capabilities with the need to invest in the development of new, improved space transportation systems. DoD is the lead agency for improving today's expendable launch vehicle (ELV) fleet, including the requisite technology development. The Department's objective is to reduce the launch costs while improving capability, reliability, operability, responsiveness, and safety.

To achieve this objective, DoD initiated the Evolved ELV (EELV) program to replace current medium- and heavy-lift launch systems. Through this program, DoD is partnering with industry to satisfy both government and the international commercial market launch needs. EELV will reduce life-cycle costs, shorten launch timelines, and enable more DoD, civil, and commercial launches per year. The medium-lift and heavy-lift EELVs will have their first government flights in 2002 and 2003, respectively. In an innovative approach, DoD will compete EELV launch services instead of separately buying launch hardware and paying for launch operations.

The Department will cooperate with the National Aeronautics and Space Administration (NASA) in the development of technology, operational concepts, and flight demonstrations for the next generation of reusable launch vehicles that will replace the space shuttle.

### MISSILE DETECTION/MISSILE WARNING

Defense Support Program satellites have provided vital strategic and theater missile warning for nearly three decades. This technology is aging and will soon be replaced by the more capable Space-Based Infrared System (SBIRS). The first increment of SBIRS will upgrade the ground-processing infrastructure and consolidate theater and strategic warning missions within one system. The second increment, SBIRS-High, will be a new generation of infrared early warning and surveillance satellites in Geosynchronous Earth Orbit, complemented by sensor payloads hosted on Highly Elliptical Orbiting vehicles. SBIRS-High will provide

data that can be used to vastly improve missile warning and defense. The third increment of SBIRS, SBIRS-Low, will be a constellation of Low Earth Orbiting satellites with an unprecedented capability to track ballistic missile targets through midcourse and terminal flight.

## METEOROLOGICAL SATELLITE CONVERGENCE

An Integrated Program Office was created to plan, develop, acquire, manage, launch, and operate the National Polar-orbiting Operational Environmental Satellite System (NPOESS). Its primary objective is to reduce the cost of acquiring and operating polar-orbiting environmental satellite systems, while continuing to satisfy both military and civil operational requirements. NPOESS is proposed as a three-satellite constellation that will enhance coverage and data availability. To promote international cooperation in space and save U.S. funds, the European Organization for the Exploitation of Meteorological Satellites will provide the third satellite in the fully converged constellation. The Department is working closely with NOAA and NASA to ensure that NPOESS continues to satisfy national security requirements.

## SATELLITE CONTROL

Satellite control involves operations to deploy and sustain military systems in space. The Air Force Satellite Control Network (AFSCN) is the primary $C^2$ support capability for DoD, the National Reconnaissance Office, civil, and allied space programs providing data processing, tracking, telemetry, satellite commanding, communications, and scheduling for over 100 satellites. The Naval Satellite Operations Center provides similar support for Navy satellite systems. The AFSCN global antenna network also provides unique launch/early orbit and anomaly resolution services. As a backup, Air Force Transportable Mission Ground Stations can provide mobile $C^2$ capabilities for certain DoD satellites.

The Department's future satellite operations architecture establishes clear vectors to migrate satellite control into an integrated and interoperable satellite control network. The Department is working closely with NASA and NOAA in developing a strategy to transition from current and planned systems into the future (20+ years). This strategy establishes timelines to improve satellite capabilities, consolidate and enhance the ground infrastructure, and develop new frequency standards.

## SPACE CONTROL

The spread of indigenous military and intelligence space systems, civil space systems with military and intelligence utility, and commercial space services with military and intelligence applications poses a significant challenge to U.S. defense strategy and military operations. Because of the value of space systems to the U.S. economy and the military in future conflicts, the United States may experience attacks against U.S. and allied space systems. Consistent with treaty obligations, DoD must be able to ensure freedom of action in space for friendly forces and, when directed, limit or deny an adversary's ability to use the medium for hostile purposes. To support space control objectives, DoD must assure the availability and effectiveness of all mission critical space capabilities. To this end, DoD is reviewing the adequacy of protection afforded space assets. DoD also has initiated a Technology Development Program that will enhance the security, survivability, and operational continuity of space systems to include ground, link, and orbital segments. Moreover, DoD must have the appropriate capabilities to deny when necessary an adversary's use of space systems to support hostile military forces.

### Research and Analysis

There is much that remains to be known about creating and leveraging information superiority. DoD initiated the Information Superiority Investment Strategy program to provide an analytical framework and a body of empirical evidence to support $C^4ISR$-related Quadrennial Defense Review analyses. DoD's $C^4ISR$ Cooperative Research Program is dedicated to advancing both the state of the art and practice of command and control. The program focuses on highly leveraged projects designed to better understand and measure shared awareness and self-synchronization, to develop and assess new approaches to command and control, to design experimental processes needed to co-evolve information-enabled mission capability packages, and to understand the challenges associated with coalition command and control.

## ENABLING BUSINESS PROCESS IMPROVEMENT

### Governance

Governance is the substructure that allows the DoD CIO to be an effective participant in the Department's mission. The CIO Executive Board serves as the executive

management body focusing on resolving issues, ratifying policies, and prioritizing information technology budget proposals. During FY 1999, emphasis was placed on policies to improve network operations and management, interoperability, computing, information dissemination management, information assurance, enterprise software licensing, governance, and the alignment of IT investments with the goals and priorities of the missions being supported.

## Knowledge Management

DoD established the Clinger-Cohen Competencies to meet the Act's requirement to acquire and maintain a skilled workforce. These competencies outline the skills and knowledge requirements for CIOs and other senior managers with information technology responsibilities. The DoD CIO has made information management education and training a primary goal to promote the development of an information management knowledge-based workforce in DoD. In July 1999, the Department conducted an in-depth study of IA and IT skills and resources within DoD focusing on training, certification, and personnel management.

## Enterprise Software Initiative

Enterprise Software Initiative (ESI) is a project that is saving money on DoD common-use, COTS software by creating DoD-wide Enterprise Software Agreements. The ESI working group has also identified software best practices and will develop a DoD-wide business process for acquiring, distributing, and managing DoD Enterprise Software. ESI is realizing savings, from 28 percent to 98 percent off General Services Administration pricing, as a result of innovative process changes. In July 1999, the Department began conducting an in-depth study of IA and IT skills and resources within DoD focusing on training, certification, and personnel management.

## ACCOMPLISHMENTS

Many advances were achieved in furthering information superiority capabilities in the plans, policy, and programmatic areas. OASD(C3I) increased emphasis on leveraging the Planning, Programming, Budget, and System and the Capabilities Program and Budget System to obtain much needed resources for programs critical to the success of the information superiority vision

and, as a result, was able to increase funding for a number of critical programs. Significant accomplishments include laying the foundation and basic elements of a secure, interoperable infostructure with the addition of funds to:

- Implement a public key infrastructure.

- Expand defensive information operations.

- Establish a joint interoperability test and standards program.

- Establish the Joint Task Force – Computer Network Defense and develop a comprehensive approach to Computer network defense.

- Build and protect the DoD infostructure.

- Complete the Global Position System.

- Ensure adequate intelligence support to the fused operations-intelligence common operational picture.

- Improve Electronic Intelligence capabilities.

- Increase future battlespace awareness by initiating the acquisition of Global Hawk acquisition and improved SIGINT.

- Enhance tactical imagery and provide a quick reaction capability.

- Initiate an end-to-end system of sensor tasking, information processing, exploitation, and dissemination of intelligence.

- Improve $C^4ISR$ support to Kosovo operations.

## CONCLUSION

Much progress was made in reaping the rewards of advancing information technology and the opportunities of space. There is convincing evidence of the enormous potential of space and information superiority-enabled Network Centric Warfare and supporting network-centric operations. Much remains to be done. The major challenges continue to be in the areas of interoperability, information assurance, and the achievement of a coherent Infostructure to support DoD's twin revolutions—the Revolution in Military Affairs and the Revolution in Business Affairs.

# Chapter 9

# TOTAL FORCE INTEGRATION

The Total Force Policy, implemented in 1973, continues to guide decisions about how manpower resources available to the Department of Defense—active, reserve, retired military, federal civilian, contractor, and allied support personnel—are structured to execute the National Military Strategy and to protect the nation's interests. The integrated capabilities of the Total Force are essential for the U.S. defense strategy to succeed. Because reserve components (RC) can provide substantial capability within a smaller defense budget, they have been called upon increasingly to contribute within the Total Force. These elements of the Total Force must be seamlessly integrated with their active component (AC) counterparts to achieve the new levels of readiness required to successfully conduct joint and combined operations—now and in the future.

## THE IMPERATIVE FOR TOTAL FORCE INTEGRATION

### Vision and Challenge

Achieving a seamless Total Force requires command emphasis on supporting the principles of Total Force integration. Progress toward improved integration of reserve and active components depends on key military and civilian leaders creating an environment that eliminates all residual barriers—structural and cultural—for effective joint integration within the Total Force. To achieve effective force integration, the Secretary of Defense has directed that the following basic principles be applied consistently throughout the Services:

- Clearly understood responsibility for and ownership of the Total Force by senior leaders.

- Clear, mutual understanding of the mission for each unit—Active, Guard, and Reserve—in Service and joint/combined operations, during peace and war.

- Commitment to provide the resources needed to accomplish assigned missions.

- Leadership by senior commanders—Active, Guard, and Reserve—to ensure the readiness of the Total Force.

### Total Force and the National Military Strategy

Since the Cold War, the National Guard and Reserve have become a larger percentage of the Total Force and are essential partners in the wide range of military operations, from smaller-scale contingencies to major

theater war. Today, reserve forces are included in all war plans, and no major military operation can be successful without them.

## ACHIEVEMENTS AND INITIATIVES

### *Active/Reserve Components and Allied Joint Operations*

Each Service routinely provides mission-essential reserve component forces to accomplish a multiplicity of global missions. Reserve components are essential in Operation Joint Forge, the Bosnia peacekeeping force. By August 1999, 18,500 Guardsmen and Reservists had served in this effort and either returned to civilian life or were on active duty. The 49th Division Headquarters, Texas Army National Guard assumes command and control of peacekeeping forces in Bosnia in March 2000. Additionally, over 5,200 Guardsmen and Reservists were called up for Operation Joint Guardian in Kosovo, where they were indispensable in air operations conducted during May and June 1999. Many have now transitioned to providing support similar to that in Bosnia.

Army RC forces provided vital augmentation in civil affairs, psychological operations, Apache and Blackhawk rotary wing aviation, air traffic control, military police, public affairs and military history, medical, supply, and transportation fields.

Naval and Marine reserve contributions included intelligence and staff augmentation, along with SeaBees and EA-6B aircraft. The Air Force recalled significant numbers of guard and reserve assets, including A-10 close air support aircraft, for Operation Allied Force/Noble Anvil in Kosovo.

In addition to involuntary call-ups, a significant number of reserve service members volunteer daily to support ongoing operations. Overall, more than 25,000 Guardsmen and Reservists supported Operations Joint Forge and Joint Guardian in Southern Europe and Northern and Southern Watch around Iraq.

Following Hurricane Mitch in October 1998, Air Force and Navy Reservists as well as National Guardsmen responded by airlifting disaster relief supplies to Honduras, Guatemala, El Salvador, and Nicaragua. The 23,000 reserve component members, primarily Army National Guard and Army Reserve engineers and medical personnel, performed initial damage surveys and restored roads, bridges, wells, and schools in those countries and the Dominican Republic.

Over the past two years, the reserve components provided support to Total Force missions across the entire spectrum of military operations. This support equated to approximately 13 million man-days (the equivalent of about 35,000 full-time personnel) in FY 1998 and 1999. This equates to about one-third of the level of support provided during the peak of the Gulf War, when more than 250,000 reservists served on active duty for an average of six months.

## RESERVE COMPONENT MANPOWER AND PERSONNEL PROGRAMS

### *Accessibility*

The Department makes continuous efforts to enhance the use of the reserve components within the Total Force. As part of this process, DoD completed a major review in 1999—the Reserve Component Employment-2005 (RCE 05) study. RCE 05 provided recommendations to the Secretary of Defense for focusing future DoD efforts in several high-payoff areas, leading to a number of follow-on actions which are currently underway. It represents a significant step forward in the continuing efforts to build a seamless Total Force.

Accessibility is one of the keys to successful Total Force integration. As reliance on the Guard and Reserve has increased over the past decade, the Department has become more innovative in ways to access the reserve components. Just as the Total Force Policy is shifting the way forces are structured and employed, the idea of planned and efficient utilization is being applied on a routine basis across the Services, leveraging untapped capabilities on reserve components to meet the ongoing mission needs of a much smaller active force.

To meet operational and contingency needs, the Department has the authority to call up a limited number of Individual Ready Reservists under the Presidential Reserve Call-up authority. Previously, this authority was limited to calling up members of the Selected Reserve. Under this authority, the Department can now access skills resident only in the Reserves, which are necessary to accomplish emerging missions. The Department is adding predictability to its call-up process, which ultimately increases accessibility by increasing volunteerism, and improving employer and employee relations. The Department is also exploring

the use of distributive (virtual) drilling for limited billets that would allow access to reservists skills while the reservist remains at home. In particular, the Department is examining the feasibility of using traditional reservists to provide joint support through virtual methods. These methods capitalize upon the accessibility of technological innovations to provide production from distributed sites, quite possibly even reservists' homes. Policies have been rewritten to provide additional flexibility in the use of training time and options for scheduling training, to support active component missions.

While the Department continues to expand accessibility to reservists, it is mindful of the dual role of reservists. Utilization of the Reserves requires appropriately balancing the nation's ongoing requirements with individual reservists' non-military career demands. Therefore, when reservists are called, it is essential that they participate in real operational missions or relevant training opportunities.

### Reserve Personnel in the Total Force

The reserve components are a valuable resource within the Total Force and are a cost-effective way of maintaining the capability to rapidly expand the force. The findings of several force structure reviews have resulted in more capabilities being placed in the reserve components, with these capabilities increasingly being called upon to support current defense missions and requirements. As the role of the reserve components within the Total Force has expanded, the size of the reserve force has declined. By FY 2001, Selected Reserve end strengths will have nearly achieved a drawdown level of just under 866,000 personnel. Simultaneously, resources to support those forces have been reduced proportionately. Resourcing for the reserve components continues to remain at about 8.3 percent of the Defense budget. But as the force and funding have been reduced, the Total Force missions have increased. The corresponding contributions of the reserve components have increased to a steady state of 12 to 13 million man-days in each of the last three years.

In evaluating this increased reliance on reserve components, indicators at the macro level reflect generally stable rates in readiness, attrition, retention, reenlistment, end strength achievement and employer relations. However, there are some trends that bear watching in the low-density and high demand units that are being called more often to support the military's worldwide missions. The attrition and retention trends in these units reflect their high usage and cause concern about strains in the relationships between reservists and their civilian employers.

### Joint Professional Military Education

Mid-career reserve component officers are playing a broader role in the joint arena. However, most of these officers have been unable to obtain advanced Joint Professional Military Education (JPME) unless they took time away from their civilian jobs to attend the formal schooling. To address this problem, the Department has undertaken the JPME 2010 Study to improve the methods for providing JPME to all officers who work in the joint environment. One of the immediate results anticipated from the JPME 2010 study is the establishment of a distributed learning course which will provide advanced JPME to reserve component officers at the United States Joint Forces Command through the Armed Forces Staff College. This may well become the platform for establishing distance and distributive JPME learning center for active and reserve officers.

### Full-Time Support Programs

The full-time support force is key to ensuring that reserve component members are ready and capable of responding to the wide range of operations. The full-time support force, enhanced by ongoing integration initiatives and supported by recent changes in law, is now better positioned to ensure guard and reserve members are smoothly integrated into new or ongoing missions and operations. Recent legislation expanded the duties that active guard and reserve personnel may perform, helping to further integrate the reserve components into the planning and decision making processes throughout the Department and the Services. Effective management of the military technician force in FY 2001 and beyond was greatly enhanced by recent legislation that placed particular emphasis on the dual status nature of the technician force, enhancing readiness and ensuring a robust technician force. The increased use of the reserve components in the wide range of operations has brought into focus the authorized level of fill of full-time support positions. To maintain the level of readiness required, the reserve components must be resourced at full-time support levels to allow execution of their expanded role.

## *Integrated Pay and Personnel Systems*

Separate active and reserve pay and personnel systems caused many delays and problems that have frustrated commanders and service members. Developing a common pay and personnel system is a high priority for the Department and particularly the reserve components, with the Guard and Reserve actively engaged in the development of the Defense Integrated Military Human Resource System (DIMHRS). The DIMHRS personnel and pay module will provide the capability to effectively manage all members of the force, active and reserve, with a single, comprehensive record of the service member's entire career.

## *Inactive Duty Training Travel Support*

The drawdown of the military and significant realignment of missions and units resulted in some Selected Reserve members traveling long distances in order to serve. Reservists not within a reasonable commuting distance of their training site frequently had to pay out-of-pocket expenses for travel by air to perform inactive duty training. Two new statutory provisions will help reduce expenses incurred by reservists.

Reservists are now authorized to purchase airline tickets at the official government fare to travel to and from inactive duty training, enabling them to purchase airline tickets at a reasonable price and to change or cancel tickets without financial penalty, if dictated by military necessity. Reserve component members are also authorized to travel space required on military aircraft to perform inactive duty training if there is no means of travel by road, railroad, or a combination of both. This provision benefits guard and reserve members residing in Alaska and Hawaii, as well as reservists who perform inactive duty training at overseas locations. This provision, in combination with the ability to purchase government rate airline tickets, will significantly reduce the personal expenses incurred by reservists.

## RESERVE COMPONENT READINESS AND TRAINING PROGRAMS

### *Force Planning*

DoD has reviewed and modified force planning processes to provide the National Command Authority greater flexibility in the use of reserve component units. Policy changes recently implemented require that reserve component capabilities be tied to war and contingency plans across the total spectrum of national military requirements. These changes provide the Services and the regional commanders in chief (CINCs) greater efficiency and flexibility in accomplishing missions and help improve active and reserve component integration. The following illustrate some of these changes:

- Army. Six Army National Guard enhanced Separate Brigades assigned to two new active Army division headquarters to form integrated divisions.

- Navy. Two fully integrated Mine Countermeasure Helicopter Squadrons with commanding officers selected from either component.

- Marine Corps. Light armored vehicle air defense platoon integrated into the Reserves light armored reconnaissance battalion. Also, active duty inspector-instructor staffs integrated into reserve unit tables of organization.

- Air Force. New Air Expeditionary Forces fully integrated.

- Coast Guard. Team Coast Guard fully integrated active/reserve personnel into units at all levels.

The Army activated two integrated division headquarters on October 1, 1999. Each integrated division consists of an active component headquarters and three Army National Guard enhanced Separate Brigades. The light division is the 7th Infantry Division located at Fort Carson, Colorado, and the heavy division is the 24th Infantry Division (Mechanized) at Fort Riley, Kansas, with a forward element at Fort Jackson, South Carolina. The enhanced Separate Brigades maintain their individual wartime mission requirements while the non-deploying division headquarters provide training and readiness oversight. Under the Army National Guard's division redesign program, selected lower priority combat units are being converted to required combat support and combat service support units. Under the Division XXI design, 515 reserve component soldiers are assigned to active component heavy divisions forming multi-component units. Reserve component soldiers will conduct all readiness training with the assigned active Army division. The 4th Infantry Division (Mechanized) is the first digital division and it started integrating reserve component soldiers in June 1999.

The Air Force has recently undertaken a transition to an Expeditionary Aerospace Force. This new organizational construct will allow even greater integration of active, guard, and reserve units to meet contingency

taskings and provides optimal use of reserve forces due to long-term forecasting of deployments. This greatly improved schedule forecasting will help minimize reservist/employer conflicts.

## Training

Reserve components plan to increase use of simulation, embedded training, and distributed learning technologies to train Selected Reservists in the Total Force. Expansion of these technologies is essential to achieving planned improvements in force integration and readiness. Distributed learning technologies have the potential to make training more cost-effective and available to the active and reserve communities. The full spectrum of distributed learning media, fully interoperable with existing DoD and government systems, is being actively pursued and will facilitate improved training readiness throughout the Department.

The Joint Reserve Intelligence Program (JRIP) leverages the pre-paid training days of approximately 20,000 intelligence reservists in direct support of force-wide intelligence requirements. In FY 1999, the JRIP allocated approximately 40,000 man-days to CINCs, combat support agencies, and the Services in direct support of current intelligence requirements. The JRIP expects to execute approximately the same amount in FY 2000. Potentially, the JRIP can provide 2,450 military work-years of intelligence support annually. The JRIP enhances individual and unit wartime readiness training by providing intelligence reservists the opportunity to do in peacetime what they do in wartime. Moreover, these reservists frequently bring unique mixes of civilian and military skills, capabilities, and networks to the operational environment that may be particularly useful, but not otherwise available to the defense community. Congressional legislation now permits joint and unified commands, combat support agencies, and the Services to transfer Operation and Maintenance funds directly to the reserve components in support of additional workdays to meet unexpected intelligence requirements. As a result, many of DoD's 20,000 intelligence reservists now provide critical and unique support to current operational requirements.

## Military Assistance to Civil Authorities

The United States' vulnerability to terrorist attacks involving weapons of mass destruction (WMD) at home has necessitated the development of a strong defense against domestic terrorism. At the direction of the President, and in partnership with Congress, new plans, policies, and laws have been developed to increase the nation's ability to counter asymmetric threats and to prepare to manage the consequences of WMD attacks against U.S. citizens and/or infrastructure.

In support of this initiative, the Department is leveraging existing military capabilities to support civil authorities in partnership with other federal agencies. The National Guard and reserve components will be increasingly called upon to apply their expertise and capabilities to this mission. The Guard and Reserve are uniquely suited for this mission because they are a highly effective workforce spanning nearly 4,000 communities across the country with well-established links to the civilian first responder community of police, firefighters, and medical service personnel of communities, counties and states.

During FY 1999, the Department took major steps to establish reserve components as critical partners in supporting response to incidents involving WMD. Ten WMD Civil Support Teams (formerly called Rapid Assessment and Initial Detection teams), each consisting of 22 full-time Army and Air National Guard members, were formed with one in each of the ten federal regions. These teams are available to provide immediate support and expert technical assistance to local first responders following a WMD incident. In FY 2000, Congress directed that 17 additional WMD Civil Support Teams be established.

The Department identified reserve component patient decontamination and WMD reconnaissance capabilities for expansion and upgrade. These units will provide support and expert technical assistance to local first responders following a WMD incident. This effort is part of the long-term goal of expanding WMD response training and equipment into several existing reserve component functional areas.

## Reserve Component Facilities

Joint use of facilities, consolidating reserve units, and co-locating units on existing military installations continue to be major initiatives in meeting reserve component facilities requirements in FY 2000 to FY 2005. Development of reserve component facility requirements has changed as a result of this effort. For example, the Army National Guard will host the Army and Marine Corps Reserve in a new joint complex in Gray, Tennessee, that includes a maintenance building, parking areas, and separate field training sites. The Army

Reserve is expanding a training center at Fort Devens, Massachusetts, to accommodate a new Marine Corps Reserve training center and outdoor range. At Scott Air Force Base, Illinois, an active component base, Air National Guard units relocating from Chicago's O'Hare International Airport will occupy new facilities. The Army Reserve built and is operating a new 84,000 square foot building in Las Vegas, Nevada, and a new 135,000 square foot facility in Manchester, New Hampshire, both of which accommodate Navy and Marine Corps Reserve units.

Although joint use programs are part of a recent facility initiative, the program has over 20 projects under design or construction to meet the needs of the active, reserve, and guard forces. As units look for ways to reduce the cost of leasing, base operations support, and real property maintenance, joint use opportunities offer the Services the ability to pool their resources and acquire needed facilities at a significantly lower overall cost.

The benefits of joint use go beyond economics. When the units live and work together, they learn about each other's capabilities, supply and maintenance programs, training systems, and culture. These experiences help to break down cultural barriers and facilitate Total Force integration.

The Department's emphasis on joint use facilities and the reserve components' many successes are the catalyst for future joint projects. The components continue to review their facility requirements with an eye toward consolidating similar needs. The Department's ability to provide needed facilities in the future will depend, in part, on how well joint use opportunities are developed.

### Reserve Component Equipment

Reserve forces are vital to the Total Force as they provide significant support for operational missions and additional combat power to augment active units. Success as a force multiplier requires that active and reserve equipment is compatible and interoperable. The reserve components receive their equipment from two sources—new acquisitions and redistribution from the active component. From FY 1999 to 2002, the Services plan to redistribute to the reserve component older equipment, which if purchased new would cost nearly $2.7 billion. The Services will also procure $6.6 billion in new equipment for their reserves. This marks a significant increase in new equipment procurements for the reserve components.

In addition to the Service procurements, Congress traditionally adds funds for guard and reserve equipment in the form of a separate National Guard and Reserve Equipment Appropriation, as well as making additions to active component procurement accounts for reserve equipment. For example, in FY 1999 Congress added $352 million in National Guard and Reserve equipment appropriations and $492 million in specific adds to active accounts. These funds were used to procure needed items such as Single Channel Ground-Air Radio Systems, trucks, C-130J aircraft, F/A-18 aircraft modifications, and F-16 Precision Attack Targeting systems.

To ensure that reserve component equipment is compatible and interoperable with active component equipment, the Department is conducting a study to determine the impact that equipment differences between active and reserve units have on reserve component mission capability. This study is expected to identify areas for further review to ensure the Total Force integration of the reserve components.

## CONCLUSION

Maintaining the integrated capabilities of the Total Force is pivotal to successfully achieving the goals of shaping, preparing, and responding to the challenges and opportunities confronting the nation. Only a well-balanced, seamlessly integrated military force is capable of dominating opponents across the full range of military operations. Employing the concepts and principles of the National Military Strategy, the Concept for Future Joint Operations, and the Total Force Policy, the Department will continue to meet the challenges of restructuring, streamlining, and modernizing its Total Force to ensure efficient and effective operational capability.

# Chapter 10

# PERSONNEL AND QUALITY OF LIFE

The past decade has been one of significant change. The military enters the new millennium one-third smaller, but richer in quality as well as diversity. However, there are signs of frustration with the tempo of operations. Consequently, the Department joins with a supportive Congress in sustaining resource levels necessary to improve recruiting, training, quality of life (QoL), and compensation programs. In January 1999, the Secretary announced a major initiative to provide across-the-board pay raises for all service members, to target pay raises for top-performing noncommissioned officers and mid-grade commissioned officers, and to improve the military retirement system—all of which were supported by Congress for enactment beginning in FY 2000. These important changes set a stage for responding to the needs of units, by first responding to the needs of people.

## RECRUITING HIGH-QUALITY INDIVIDUALS

### Establishing Sound Goals

The Services must recruit more than 200,000 young people each year for the active duty armed forces, with another 150,000 for the Selected Reserve. An aggressive recruiting effort has sustained the force, ensuring that capable and seasoned leaders are available to units around the world. Today, recruiting requirements are growing as the drawdown nears its completion, creating a demand to replace losses one-for-one. A robust job market, coupled with an increased propensity among high school graduates to go on to college, however, has created a tough recruiting environment.

DoD generally reports recruit characteristics along two dimensions—educational achievement and aptitude. Both are important, but for different reasons.

The Department values recruits with a high school diploma because years of research and experience show that high school diploma graduates are more likely to complete their initial enlistment contract. The better retention associated with those who complete high school saves money. It costs taxpayers more than $35,000 to replace (recruit, train, and equip) each individual who leaves service prematurely. This argues for recruitment of those who are most likely to adapt to military life and stay the course—the high school diploma is a reliable indicator of stick-to-itiveness. However, it is important to evaluate alternative ways to screen for

success, with a goal of identifying those who would stay the course despite an education level that might suggest otherwise. To that end, the Department will continue to evaluate, through means such as pilot tests, whether the Services can expand the pool of eligibles (e.g., by recruiting more GED holders) without harming retention rates.

Aptitude also is important in assigning recruiting goals. All recruits take a written enlistment test called the Armed Forces Qualification Test (AFQT), which measures math and verbal skills. Again, research and experience show that those who score at or above the 50th percentile on the AFQT demonstrate greater achievement in training and job performance compared to those below the 50th percentile. Roughly 66 percent of recent recruits scored above the 50th percentile of a nationally representative sample of 18 to 23 year olds.

### Challenges in a Changing Recruiting Environment

Recruiting has been challenging over the past several years. It was especially so in FY 1999 because of a robust economy, increased interest among potential recruits in attending college, and fewer veterans to serve as role models. During 1999, the Army fell short of its recruiting mission by about 6,300 and the Air Force was short slightly more than 1,700 new recruits. The Navy and Marine Corps achieved requirements in FY 1999. All Services achieved excellent recruit quality, as shown in Table 14.

As Table 15 shows, FY 1999 was a mixed recruiting year for the Selected Reserve. For FY 1999, the Army National Guard achieved 100 percent of their recruiting goal and the Marine Corps Reserve achieved 101 percent of its goal. The Army Reserve missed its objective by 10,300 recruits; the Naval Reserve missed its goal by 4,700 recruits; the Air National Guard achieved 99 percent of their goal; and the Air Force Reserve failed to achieve their recruiting goal by about 2,000 recruits.

Since 1975, the Department of Defense annually has conducted the Youth Attitude Tracking Study (YATS), a computer-assisted telephone interview of a nationally representative sample of 10,000 young men and women. This survey provides information on the propensity, attitudes, and motivations of young people toward military service. Enlistment propensity is the percentage of youth who state they plan to definitely or probably be serving on active duty in at least one of the

Services in the next few years. Research has shown that the expressed intentions of young men and women are strong predictors of enlistment behavior.

Results from the 1999 YATS survey show that, overall, the propensity of youth for military service was higher than in the past few years. In 1999, 29 percent of 16-21 year-old men expressed interest in at least one active-duty Service; only 26 percent had expressed such interest the previous few years. Young women's propensity also increased slightly. In 1999, 15 percent of 16-21 year-old women expressed interest in military service compared to 12 and 13 percent in 1997 and 1998, respectively.

During the first half of the 1990s, enlistment propensity declined as the Services experienced serious cuts in recruiting resources. During the 1995-1998 period, recruitment advertising almost doubled as compared with 1994 expenditures, and YATS results for those years suggested that the earlier decline in propensity may have stabilized, even in the face of a robust economy. Now the 1999 results show an increase in youth interest in military service, further reinforcing the importance of advertising in raising youth awareness about military opportunities. Thus, continued investment in recruiting and advertising resources is required to assure that the pool of young men and women interested in the military will be available to meet Service personnel requirements. Appendix F contains additional detail on 1999 YATS results by gender and race/ethnicity.

The Department has initiated a range of initiatives to address the challenges of recruiting, including authorizing the Services to increase both enlistment bonuses and Service college funds to the statutory maximums, increasing the number of production recruiters, and reprogramming funds to increase recruitment advertising. Because it is costly to replace a recruit who leaves early, the Department is also focusing on reducing first-term attrition. A joint-Service working group is reviewing a series of options to stem such early losses. The Department also is initiating a two-year recruiting re-engineering effort, which will test and evaluate a series of recruiting initiatives to identify and create new market opportunities; improve recruiter efficiency and effectiveness by exploiting recent advances in technology; and reduce attrition. Finally, recognizing that recruiting in the coming millennium may require new and innovative programs, the Secretary sponsored a comprehensive review of the Department's recruitment advertising programs. The results of this review are far

ranging and will help the Department better communicate its message to America's youth.

## National Service and Recruiting Programs

The Department continues to review the potential impact of National Service on military recruiting, and believes that both programs can coexist successfully since the National Service program is smaller and the value of its benefits is of lower monetary value than military enlistment benefits.

## Military Force Management

### RETENTION

Today's retention environment is characterized by frequent employment of the armed forces in a variety of roles and missions intended to ensure regional stability and economic progress in important areas of the world. Such an environment requires a fully manned, agile military operating within tailored force packages that support varied missions. The Department's ability to meet these commitments may be challenged by the retention strains currently being experienced.

**Table 14**

### Quality and Numbers of Enlisted Accessions – Active

| | FY 1999 Indices | | | Accessions[a] (in thousands) | | | |
|---|---|---|---|---|---|---|---|
| Category (OSD Standard) Service | Percent High School Diploma Grads (90) | Percent Above Average Cat I-IIIA (60) | Percent Cat IV (4) | Total FY 1999 Objectives (000s) | Total FY 1999 Actual (000s) | Final FY 1999 Percent Mission Accomplishment | FY 2000 Mission (projected[b]) (000s) |
| Army | 90% | 63% | 2% | 74.5 | 68.2 | 92% | 76.5 |
| Navy | 90% | 65% | 0% | 52.5 | 52.6 | 100% | 59.2 |
| Marine Corps | 96% | 64% | 1.0% | 33.7 | 33.7 | 100% | 34.6 |
| Air Force | 99% | 76% | 0.2% | 33.8 | 32.1 | 95% | 33.4 |
| Total | 93% | 66% | 0.9% | 194.5 | 186.6 | 96% | 203.7 |

[a] Includes prior service accessions. Only Army and Navy recruit to a prior service mission.

[b] Based on Service recruiting production reports and DoD FY 2000 budget estimates (includes prior service accessions).

**Table 15**

### Enlisted Accessions – Reserve

| | Accessions[a] (in 000s) | | | |
|---|---|---|---|---|
| Category (OSD Standard) Service | Total FY 1999 Objectives (000s) | Total FY 1999 Actual (000s) | Final FY 1999 Percent Mission Accomplishment | FY 2000 Mission (projected[b]) (000s) |
| Army National Guard | 57.0 | 57.0 | 100 | 54.0 |
| Army Reserve | 52.0 | 41.8 | 80 | 48.5 |
| Naval Reserve | 20.5 | 15.7 | 77 | 18.4 |
| Marine Corps Reserve | 11.2 | 9.6 | 101 | 10.1 |
| Air National Guard | 8.5 | 8.4 | 99 | 10.1 |
| Air Force Reserve[c] | 9.5 | 7.5 | 67 | 10.5 |
| Total | 158.7 | 140.0 | 88 | 151.6 |

[a] Includes prior service accessions.

[b] Based on Service recruiting production reports and DoD FY 2000 budget estimates (includes prior service accessions).

[c] The Air Force Reserve goal includes officer and enlisted data.

Pilot retention is a major concern within the Air Force and the Navy. Projections from both government and independent agencies forecast a sustained increase in commercial airline hiring, which will continue to affect manning in this critical career field. The Department is enacting a full range of management initiatives and retention incentives to ensure that cockpits stay manned. Where individual qualification and experience allow, the Department's goal is to fill non-flying staff billets within the Navy and Air Force ranks with non-aviators in order to preserve pilot to aircraft ratios. Aviators are not the only retention concern. The Army has experienced an unexpectedly high loss rate for captains, who comprise 35 percent of its officer corps, are vital to the Army's ability to accomplish its mission. The Navy's surface warfare officer shortage challenges fleet operations worldwide, and the Marine Corps has growing concerns about fixed wing pilot losses. All of these areas will continue to receive close management review to correct shortfalls and to prioritize the distribution of available manning, placing assets where they best support operational readiness.

With regard to the enlisted force, the Army is meeting overall retention goals, but encountering shortages in some of the low-density, high-demand occupation fields. Although Navy first-termers and mid-career petty officers are not enlisting at the pace of recent years, the experience mix is generally good. The Air Force is undergoing an unusual downturn in retention and management efforts continue to focus on the critical sortie generating skills such as crew chief, avionics maintenance, and air traffic control. Marine Corps retention remains steady. The Corps, however, is experiencing shortages in certain signal intelligence, data processing, and communications career fields. All of these point to a sustained need to fully fund the retention incentives set forth in the President's Budget.

The Department continues to work closely with the Services in addressing retention, recognizing that not all solutions are monetary. Senior leadership, for example, is focusing on segments of the force that may be overstressed by deployment patterns. These efforts include reductions in the number and scope of inspections and exercises, as a means of eliminating retention detractors.

### TEMPO

DoD uses two terms to describe the tempo of the force. Personnel tempo (PERSTEMPO), defined as the time an individual spends away from his or her home station, is an important factor in measuring (assessing) force stability. The Department remains focused in this area since survey results show a clear linkage between PERSTEMPO and decisions to leave the military. The pace of operations, or OPTEMPO, describes the pace of operations experienced by units, especially in terms of deployments and training; this area remains a concern since OPTEMPO drives PERSTEMPO.

The Department is examining the quality of life considerations of high PERSTEMPO and OPTEMPO. More of today's military is married than was the case ten or twenty years ago. Moreover, even the more junior members maintain a family focus. With that in mind, the Department is surveying service members to determine, in part, what importance service members attach to quality of life issues when making their decisions to stay or leave.

Quality of life initiatives focus on enhancing predictability of duty schedules, distributing missions to the Total Force and protecting quality of life during the interdeployment period. The Air Force's Aerospace Expeditionary Force is a promising step toward making Air Force life more predictable, and the Army is looking at deployment rates to help reduce stresses on units. Additionally, the Department remains committed to the establishment of measurements to support close review of emerging trends in the pace of operations, including analyses of individual tempo levels.

### JOINT OFFICER MANAGEMENT

The Department continues to benefit from the Joint Officer Management Program enacted by the Goldwater-Nichols Act of 1986. The number of individual officers who are educated and experienced in joint matters continues to grow, with the leadership of the Services conveying to their officer corps the importance of joint duty and joint education. As a positive indicator of that commitment, the Department, in 1999, witnessed its most significant reduction in the number of joint duty waivers of any previous year for officers attaining general or flag rank. The Department remains committed to the goal that every line officer selected for general or flag rank is experienced in joint operations.

### EQUAL OPPORTUNITY

President Harry Truman once said, "We cannot afford the luxury of a leisurely attack upon prejudice and discrimination. The national government must show the way." Fifty-one years ago, he acted to prohibit discrimination in the federal government and to integrate the

armed forces. This commitment to equal opportunity started by President Truman has produced within DoD today an institutional culture that values fairness, dignity, and justice in the treatment of its most important resource—people.

Entering the 21st century, the Department acknowledges that the continued success of the all-volunteer force and the continued achievement of national security interests require the full use of the talents of quality recruits, irrespective of race, ethnic background, and gender. In an October 1998 policy memorandum to assign accountability for equal opportunity programs, Secretary of Defense Cohen proclaimed, "I will not tolerate illegal discrimination against or harassment of any DoD personnel. I expect all commanders, executives, managers, and supervisors to work continuously toward establishing a climate of respect and fairness for all DoD personnel."

Although challenges continue in terms of representation of women and minorities in senior grades and ranks, the United States military can justifiably present itself as a model of diversity and equal opportunity. When U.S. forces are deployed to countries around the world, both allies and foes alike see a strong, competent military, reflective of America's racial and ethnic diversity.

Additionally, the Department is recognized internationally as a model of diversity and a template for supporting force cohesion and readiness through equal opportunity policies and human relations education. For example, the Defense Equal Opportunity Management Institute (DEOMI), is a key member of the Defense Committee Working Group supporting Vice President Gore's U.S.-South Africa Binational Commission. Through the International Military Education and Training program, DEOMI provides training to South African military officers to assist them in formulating equal opportunity policies within the South African National Defense Force.

## WOMEN IN THE MILITARY

The Defense Advisory Committee on Women in the Services (DACOWITS) was established in 1951 to assist the armed forces in recruiting quality women for military service. The role of DACOWITS has since evolved into advising the Secretary of Defense on all policies relating to the utilization and quality of life of female service members, as well as general quality of life issues.

In 1999, DACOWITS members conducted over 70 continental United States installation visits covering all five Services including the reserve forces. Additionally the Executive Committee conducted overseas installation visits to the United States Pacific Command area of responsibility, visiting bases in Hawaii, Okinawa, Korea, and Japan. Over 2,700 service women and men provided their views to DACOWITS members on such priority issues as increasing operating and personnel tempos, health care, promotion opportunity, and assignments. Notably, complaints and concerns about sexual harassment and discrimination significantly declined from previous years. Command climates were, for the most part, realistic and generally supportive of women in the Services. In 1999, DACOWITS focused on:

- Ensuring a fair, equitable and professional work environment; addressing the disparities in promotion/selection opportunities; encouraging commitment to command climates free from unlawful discrimination; and supporting a leadership environment that fosters good order and discipline.

- Assessing and measuring women's opportunities to contribute to the nation's defense in a manner that most effectively utilizes their talents.

- Taking steps to guarantee a safe, healthy, and responsive environment in which to live and work for military women and their families. Areas of emphasis included affordability, availability, and accessibility of quality physical and behavioral health care; housing; child/youth care; and effective programs and services for victim assistance and protection against violence.

## CIVILIAN PERSONNEL

### Civilian Downsizing and Transition Assistance

The Department continues to reduce civilian positions through streamlining without disrupting the defense mission. It has been able to do this humanely and efficiently through the use of its innovative transition tools. Because of these efforts, the Department has experienced ten consecutive years of downsizing with minimal employee turbulence. Civilian employment has been reduced by nearly 400,000 positions with fewer than 9 percent of these being actual employee layoffs.

Between its inception in 1993 and the end of FY 1999, the Voluntary Separation Incentive Payment program prevented the need for approximately 139,000 layoffs. Legislative authority to offer buyouts was extended to

2003. Additionally, the Voluntary Early Retirement Authority was used to save over 59,000 employees from involuntary separation or demotion during the same period.

Since the end of FY 1989, the Department reabsorbed over 72,000 displaced employees through its award-winning Priority Placement Program. Attendant use of the Defense Outplacement Referral System resulted in workers facing dislocation being employed outside DoD.

## Civilian Training, Education, and Development

A more corporate approach to training, education, and development of the Department's civilian workforce is a priority as downsizing has resulted in fewer new hires and as DoD seeks to avoid skill and experience imbalances. The Department and its components are focusing on a managed approach to develop technical and professional skills, while the Defense Leadership and Management Program (DLAMP) was created to address the need for the systematic development of managerial and leadership skills. DLAMP is a systematic, Department-wide program of joint civilian education and development. Implementing recommendations of the Commission on Roles and Missions of the Armed Forces, DLAMP provides the framework for educating and developing current and future civilian leaders in a manner that complements the Service programs. It fosters an environment of shared understanding and sense of mission among civilian employees and military personnel. Inaugurated in 1997, DLAMP incorporates defense-focused graduate education, rotational assignments in a wide variety of occupations and organizations, and professional military education into a comprehensive program designed to prepare civilians for 3,000 of the Department's top civilian leadership positions.

The program has grown to over 850 participants, with an anticipated addition of 350 new participants each year. To date, 26 defense-focused graduate courses have been developed, with the final three courses scheduled for completion in 2000. In FY 1998 and 1999, the program conducted 60 graduate courses with 822 participants. For FY 2000, 90 courses are scheduled. The program has dramatically increased civilian participation at the senior service schools, as well as sending DLAMP students to a new three-month Professional Military Education (PME) course at the National Defense University. During FY 1999, 99 participants completed a ten-month PME course through DLAMP; 83 additional participants began a 10-month PME program in August 1999. There have been 48 graduates of the new three-month PME program, with 96 more students scheduled to attend that program during FY 2000. While the overall level of support and the educational opportunities associated with this program cannot be directly related to student promotions, it is important to note that 16 individuals were selected for senior executive service positions while participating in DLAMP.

## Defense Partnership Council

In FY 1999, the Defense Partnership Council initiated and completed a large-scale effort to examine partnership and labor relations initiatives in the Department. A survey of 20 percent of the Department's sites with appropriated fund bargaining units provided the data for the study. The resulting report highlighted the successful characteristics of partnership efforts; the barriers to forming and sustaining partnerships; the contributions labor and management partners make to organizational effectiveness; and the value of training in creating cooperative labor relations. The Council will undertake a variety of initiatives to foster further partnership efforts in the Department as a result of the completed study.

## Civilian Personnel Regionalization and Systems Modernization

The Department's innovative efforts to regionalize civilian personnel services and deploy a modern information management system are well underway. Regionalization of service delivery capitalizes on economies of scale by consolidating processing operations and program management into 22 regional service centers. By the end of FY 1999, the military departments and defense agencies had established all 22 regional service centers and 88 percent of the planned customer support units. The customer support units that are operating provide personnel service to 84 percent of the Department's civilian workforce. Personnel support functions requiring face-to-face contact will remain at over 300 DoD customer support units worldwide. Through these consolidations, the Department seeks to attain a ratio of 88 employees served per personnel specialist by the end of FY 2001 compared to the current baseline of 61:1.

During FY 1999, the Department completed system qualification testing of the modern Defense Civilian Personnel Data System (DCPDS). Deployment of the

modern DCPDS for operational testing began in October 1999 and is scheduled for completion by December 2000.

### Demonstration Projects

Personnel demonstration projects permit agencies to obtain waivers from federal civil service regulations to test alternative personnel management approaches. The DoD-wide, civilian acquisition workforce personnel demonstration began operating in FY 1999 bringing the total number of active demonstration projects to 10. In addition to the DoD-wide project, nine science and technology laboratories are participating in human resources management demonstration projects (five in the Army, three in the Navy, and one in the Air Force). Two more Army laboratories are actively developing demonstrations.

### Injury and Unemployment Compensation

The Department's consolidated injury compensation and unemployment compensation programs again set the government-wide standard. The program's active evaluation and verification methods for reviewing claims included the use of DoD liaison personnel co-located with Department of Labor district offices, home visits, and a comprehensive automated data tracking system deployed at 415 installations. Since 1994, these methods directly contributed to a 2.5 percent decrease in the Department's injury compensation bill, avoiding $46.7 million in costs.

### International Personnel Management

During 1999, the Civilian Personnel Policy Deputate was actively involved in international civilian personnel management. The Deputate continued its close collaboration with the Office of the Secretary of Defense and the Services in Germany to implement the 1998 accord, including a bottom-up review of all technical expert and troop care positions. The Deputate is also actively engaged with its counterparts over proposed German initiatives related to U.S. citizen hiring practices.

In Portugal, the Deputate serves on a bilateral commission that is responsible for implementing the 1996 Bilateral Agreement. The Commission, and its subordinate U.S.-Portugal Labor Committee, focus on cooperation and labor matters involving some 900 Azoreans at Lajes Air Base. Both groups meet at least twice yearly to address ongoing initiatives on cooperation in defense and on matters involving workers at Lajes.

In April 1999, the Deputy Assistant Secretary of Defense for Civilian Personnel Policy visited with senior Ministry of Defense officials in Santiago, Chile, as part of the U.S.-Chile Defense Consultative Committee. The Deputy Assistant Secretary of Defense conducted a working group on civilian matters focusing on defense civil service and education of civilians in defense. Efforts in developing the civilian cadre and leadership in the Defense Ministry are based on the DLAMP model. A similar effort has begun with defense counterparts in Argentina, and technical assistance is continuing in Croatia.

### Recruitment and Hiring

After only two years, DoD has exceeded its four-year goal to hire 1,600 former welfare recipients. Over 2,600 new employees have been placed in both appropriated and nonappropriated fund jobs. This figure represents 165 percent of the four-year goal and 19 percent of the total 14,000 welfare to work employees placed throughout the federal government in support of the President's pledge to end traditional welfare.

## QUALITY OF LIFE

An essential component of military morale is a good quality of life. Troops who do not have to worry about basic home-based issues are more ready than those who do. Living near people of like circumstance enhances military identity and builds informal support networks. Quality of life is also about choice and control over critical areas of one's life. Unfortunately, military work does not always allow for a lot of choice, therefore, it is imperative to build in choices in community life. The challenge is to ameliorate mission demands of military life with strong community support programs that provide needed respite, build morale, and develop a strong sense of community. The goal is to build strong communities which create cohesion and career commitment. As such, the Department remains committed to seven guiding principles for QoL:

- Improve standard of living by continuing to fund raises in basic pay.
- Build more predictability into military life.
- Provide modern communities with quality health care and housing.
- Increase educational opportunities (e.g. distance learning, spouse eligibility). This is a cornerstone of the Department's quality of life program.

- Ensure parity in QoL programs across installations and Services.

- Build a solid communication line to troops and their families so as to stay in touch with their insights and perceptions.

- Revitalize a sense of community.

### *Taking the Pulse of Quality of Life – Communication and Marketing*

In this age of accelerating change and borderless, instantaneous communication, the proactive efforts to communicate with service members has never been more important. The Department is taking aggressive steps in this area to communicate the wealth of support available to service members and families and to hear directly from the troops in the field on their most urgent needs. The Department will complete a comprehensive survey on quality of life and the results will be published in 2000. This effort will be expanded to comply with the congressionally-directed requirement to do an annual targeted survey. DoD uses surveys, such as this one, to stay abreast of issues in the field. Regional and Service-efforts such as the Army's Family Action Plan, the Air Force's Bi-Annual QoL Survey, the QoL in the U.S. Marine Corps study, and the United States European Command's Junior Enlisted Conference help the Department's efforts to stay in touch with troops and families. In 2000, the DoD QoL Symposium will showcase technology as a tool to improve service delivery in quality of life. Technology initiatives play a major role in the Department's marketing efforts. Interactive Web sites such as Navy Lifelines, the Air Force's FAMNET/ Crossroads, and the soon to be released Department QoL Gateway not only allow for traditional information dissemination but are designed to allow for surveys, polling, and instant feedback on quality of life issues from the field. Communication with U.S. troops and families is critical to empowering them to make sound decisions about life in military communities.

### *Compensation and Benefits*

America's armed forces are operating under a combination of influences never before encountered. The end of the Cold War fundamentally changed the demands on America's military. At home, the nation is experiencing economic prosperity and a growing demand for high technological skills and knowledge. These economic developments, welcome as they are, mean sharper competition for the high-quality men and women needed for the armed forces. Within the Services, there are growing challenges in recruiting and retention. In response to these developments, the Department took actions designed to improve the quality of personnel recruited and retained in America's armed forces throughout the 21st century. With the support of Congress, the Department sponsored pay and retirement improvements for the men and women of the armed services to compensate them fairly for their outstanding performance and dedicated service to the nation. The Department's pay and retirement improvements in FY 2000 included three key initiatives:

- Across-the-board pay increases for all service members. Effective January 1, 2000, all service members received a pay raise of 4.8 percent. In addition, annual programmed pay raises are 3.7 percent for FY 2001 and FY 2002 and 3.2 percent for FY 2003 and beyond.

- Pay table reform that provides greater reward for performance. In addition to across-the-board pay increases on January 1, 2000, one time adjustments to the pay table will be made July 1, 2000, that will fix the imbalances in the proportion of raises coming from longevity and promotion. These systematic changes are the first in 50 years and acknowledge the importance of performance while encouraging continued military service.

- Improving the military retirement system to meet changing times. The retirement system for service members who entered after 1986 (Redux Retirement Plan) has been a continuing source of dissatisfaction. DoD initiated changes with the legislation will now give affected personnel an option to retire under the pre-1986 military retirement plan or to accept a one-time $30,000 lump sum bonus and remain under the Redux Retirement Plan.

These initiatives by the President, Secretary of Defense, the Joint Chiefs, and Congress respond to critical recruiting and retention indicators. Taken together, this is the largest increase in military compensation in a generation. They are part of a larger effort that includes quality of life improvements, improved housing and subsistence allowances, and targeted incentive pays, special pays, and bonuses.

## Sustaining Compensation

The President's Budget for FY 2001 will continue the excellent work begun in FY 2000 to improve compensation for the uniformed forces and support critical recruiting and retention concerns.

The Department recently unveiled a major initiative to eliminate service members' out-of-pocket costs for living off post by increasing the basic housing allowance. At present, service members pay as much as 19 percent of their housing costs out-of-pocket while individuals living on base have their housing and utilities paid for.

The Department is committed to cutting these out-of-pocket expenses to 15 percent by FY 2001 and gradually reducing them to zero by FY 2005.

The leaders of DoD and the Services are deeply committed to providing for the welfare of the men and women who serve the nation so well, and for their families. These initiatives all work to improve the quality of life of service members and their families, while preserving high levels of personnel readiness. Competitive compensation systems that aid the effort to recruit and retain quality people underpin the building of the 21st century military.

| Table 16 | |
|---|---|
| **Executive Committee Workplan** | |
| ACTION 1. Address Health Care Concerns<br><br>OUTCOME: A constantly fit and ready force, and healthy communities, at home and abroad, in peacetime and in conflict.<br><br>TASKS<br><br>• Review access and availability of counseling services to include family wellness, etc.<br><br>• Educate beneficiaries on TRICARE options and how to access care.<br><br>• Review how women's health care needs are addressed to include impact of lack of availability of OB/GYN and pediatric care on mission readiness.<br><br>• Review how health care needs/requirements are addressed for the reserve component, recruiters, and outside the continental United States (OCONUS) DoD civilians. | ACTION 3. Address Emerging/Unique QoL Issues and Overall QoL Policies of the Total Force (to include DoD civilians, recruiters, and reserve components)<br><br>OUTCOME: An enhanced integration of the Total Force by improved QoL support policies.<br><br>TASKS<br><br>• Advocate for a competitive DoD compensation system.<br><br>• Exploit Internet-based technology to deliver a broad range of QoL services to recruiters, reservists, deployed, geographically separated, and on/off base personnel.<br><br>• Develop QoL support policies for the Total Force (with initial focus on civilians, reserves, and recruiters).<br><br>• Develop a needs assessment instrument to determine needs of top 20 high tempo units/specialties. |
| ACTION 2. Prepare Community Support for the 21st Century<br><br>OUTCOME: A military force with a strong sense of community and pride in belonging that preserves Service cultures.<br><br>TASKS<br><br>• Address the effect of regionalization, competitive sourcing, and privatization on QoL programs.<br><br>• Support full implementation of the Youth Strategic Plan.<br><br>• Identify current levels of support and gaps concerning the Impact Aid issue.<br><br>• Continue housing improvements and implement Service master plans for housing and barracks/dormitories.<br><br>• Foster life-long learning for the entire community through installation educational activities including DoDEA, voluntary education, libraries, spouse education, and other activities.<br><br>• Continue significant improvements in the quality and availability of physical fitness centers and programs.<br><br>• Sustain the commissary benefit.<br><br>• Support implementation of the DoD plan to address violence in military families. | ACTION 4. Take the Pulse of QoL<br><br>OUTCOME: Timely information to make decisions about QoL support for troops and families.<br><br>TASKS<br><br>• Develop a White Paper to outline and reinforce DoD's commitment to QoL of the Total Force and families.<br><br>• Integrate Service and OSD survey and research efforts to gain comprehensive information on QoL to include reserves.<br><br>• Ensure predictability and longevity of viable QoL support programs to ensure they are executed for intended purposes and advocate for additional resources.<br><br>• Individual Services develop a process to identify and follow up on grass roots concerns of singles and families.<br><br>• Develop DoD common goals for the 21st century that promote a sense of belonging and service. |

## Quality of Life Executive Committee Workplan

On May 20, 1999, the QoL Executive Committee approved a new workplan. This key action by the committee allows the Department to address QoL holistically and to institutionalize a process to ensure continued improvements to QoL. The workplan is a flexible document that will be amended as required to address grass root concerns and to provide continuous QoL improvement into the 21st century. The plan is prioritized to ensure that the most immediate concerns of active duty members and their families as well as members of the reserve forces and DoD employees are being met.

## Quality of Life Support for Deployed Personnel and Families

In the high OPTEMPO environment U.S. forces are experiencing, QoL programs are an integral element in meeting mission requirements both on the front lines and at home station. In forward-deployed areas, such as the recent deployment to Kosovo, troops are often restricted because of force protection measures and culturally isolated. In these environments, QoL services are islands of respite for troops to take a break and pursue self-improvement goals such as education or personal fitness. Most base camps allow for direct links to home thus allowing families to stay in touch via e-mail. This is a very popular tool. During a recent six-month deployment, the USS Carl Vinson counted approximately 3.3 million e-mails between the ship and family and friends.

In recognition of the importance that QoL services play during deployments, the FY 1999 Emergency Supplemental provided funding for the following quality of life initiatives:

- Morale, welfare, and recreation equipment and programs to forces deployed to Bosnia and Southwest Asia.

- Interconnectivity hardware to expand and enhance communications capability between families and deployed service members.

- Respite child care and youth support for families of deployed personnel.

- Library materials and off-duty education materials for deployed personnel.

- Entertainment performances overseas.

- Lifelines Internet System—a computer-based QoL information support system particularly helpful for families of deployed and geographically separated members.

## Unique Reserve Component Challenges

Service in the National Guard and Reserve requires members to balance a full-time civilian career with military service requirements and family and community commitments. The increased use of the Guard and Reserve has resulted in many reservists spending more time away from their full-time civilian employment and family to meet military obligations. Reservists also face the real possibility of being involuntarily called to active duty for extended periods. This creates unique quality of life concerns for reservists and their families. Many of the reserve-unique needs are related to mission, function, and particularly location. To address these needs, the Quality of Life Executive Committee recently chartered a Total Force Support Working Group, which is working on developing access to affordable health care, local family support systems, assistance with employer support issues, family friendly leave policies, and job sharing and telecommuting opportunities.

## Preparing the Military Communities for the 21st Century

### OVERALL FUNDING PROFILE – MILITARY CONSTRUCTION AND OPERATION AND MAINTENANCE

Military communities build esprit de corps and a sense of belonging; they are the military's hometowns. The FY 2001 budget reflects the Department's strong commitment to its QoL triad of compensation, medical, and community and housing programs.

### FAMILY HOUSING AND BARRACKS

The Department continued pursuing its goal to eliminate inadequate family housing units by 2010 and eliminate permanent party gang latrine barracks by 2008. The FY 2000 budget request included $636 million to replace or revitalize approximately 5,400 inadequate military family housing units and $2.9 billion to lease, operate, and maintain family housing units. DoD's developing housing privatization program remains critical to achieving the 2010 goal by leveraging federal resources with private sector capital. The budget request also included $780 million to eliminate over 11,000 inadequate unaccompanied housing bed spaces. The unaccompanied housing program is on track to meet its 2008 goal.

## FAMILY SUPPORT

Family support is another integral part of the Department's strategy to maintain a ready force. In FY 1999, as part of its ongoing efforts to address emerging family issues, DoD began transforming its principal family program outreach vehicle, the Military Family Resource Center, from a library to a true national clearing house. Studies show family satisfaction with military life plays an important role in retention. The Department also launched two family well-being initiatives addressing special health and or medical needs and reserve family readiness.

- In the special needs arena, the Department is conducting an in-depth organizational analysis of the program. This assessment may lead to reengineering service delivery and other important aspects of the special needs program.

- The Offices of the Assistant Secretaries for Force Management Policy and Reserve Affairs formed a partnership to create a strategic plan for reserve family readiness through 2006. The plan will address the increasing importance of family readiness in the reserve components as reservists are called upon more frequently and for longer periods to support military requirements.

- In addition, in response to the National Defense Authorization Act for Fiscal Year 2000, the Department is creating a joint military/civilian Domestic Violence Task Force. The task force would:

  •• Develop a strategic plan to improve DoD's response to domestic violence.

  •• Examine issues of victim safety, military discipline (as it relates to domestic violence), training for commanders, and coordination with civilian authorities.

  •• Review DoD research and future demonstration projects relating to domestic violence, and recommend further topics for research in this area.

## ECONOMIC WELL-BEING

Military family economic well-being initiatives focused on the related issues of relocation and employment assistance. The Department contracted with a major relocation information company to provide specific information on housing, education, climate, medical, and other important data about the communities surrounding U.S. military installations. This Web-based service supplements the Department's Standard Installation Topic Exchange Service with detailed demographic information and calculators to determine mortgage and other living costs. In addition, FY 1999 saw the culmination of three major spouse employment initiatives. Two, three-year pilot programs ended in September 1999: the Spouse Employment Demonstration Program and the DoD/Small Business Administration Partnership (which provided entrepreneurial training to military spouses).

## CHILDREN AND YOUTH

The DoD child care system encompasses child development centers, family child care, school-age care programs, and resource and referral programs. Child care is available at approximately 300 DoD locations, including over 800 centers and 9,900 family child care homes. DoD currently meets 58 percent of the need for DoD child care services, and the Services expect to reach the Department's goal of 65 percent by 2003. In 1999, the General Accounting Office (GAO) completed a study validating that DoD provides quality, affordable child care at a cost comparable to civilian center care. The report found that the DoD child care program cost per child care hour is approximately 7 percent more per hour than civilian centers. GAO, however, acknowledged several legitimate variables that cause military programs to cost slightly more than civilian programs. These include higher accreditation levels for military programs (to date, 89 percent of DoD centers have achieved national accreditation, higher wages, longer hours of operation, and age differentials (more infants and toddlers). The Department is on track to achieve 100 percent accreditation in 2000.

Military youth issues came to the forefront in FY 1999. The Department published *The Strategic Youth Action Plan*, which provides a road map for youth policy and programs into the 21st century. The Department predicts this plan will have a major impact on every facet of military youth programs. Military youth programs continued to pursue partnerships with the Boys & Girls Clubs of America. These partnerships grant military youth programs access to Boys & Girls Club training programs, program assistance, and allow military youth to participate in national Boys & Girls Club events and competitions. The Services will be 100 percent affiliated by 2002.

*MORALE, WELFARE, AND RECREATION*

The Department provides MWR programs to support the readiness of the force and the retention of valued service members. MWR programs serve both a peacetime and a wartime function. At home stations they are in many cases the most visible programs and provide the most tangible evidence that the leadership cares about quality of life. In wartime or during deployments, MWR programs are the lifeline for after duty activity for troops, providing both respite from arduous conditions and a cultural link to America and a link to their homes.

The changing nature of recreational pursuits requires the Department to have programs that are adaptive, targeted, and responsive to the service member. The Department has responded to the changing nature of recreation service delivery today with a vision to provide comparable MWR programs and activities across Services and installations, and contribute to readiness and the development of strong, self-reliant, and resilient service members, civilians, and families. Technology is also contributing to the changing nature of recreation today in the Department. Examples of this change are high-tech offerings, such as the Cyber Net Cafe at Naval Station Norfolk, that allows service members to have lunch, surf the Internet, and read the latest bestsellers, and physical fitness centers that use smart cards to customize training programs.

To position these programs to provide strong community support, the Department is pursuing the following strategic goals:

- Modernize and upgrade MWR programs, with an immediate focus on physical fitness and library programs. The Department launched Operation Be Fit, a special initiative to improve fitness programs, increase individual participation in fitness activities, and educate the military community on the benefits of an active lifestyle. From a Defense Department point of view, DoD gains an increase in productivity and decreased absenteeism, a more physically and mentally capable military force, lower health care costs, and improved quality of life within the military community. On January 25, 1999, the Acting Assistant Secretary of Defense, Force Management Policy, signed a policy memorandum establishing mandatory core standards for DoD MWR physical fitness centers. Additionally, the Department is developing uniform physical fitness standards and test methods for all Services. The Department has an aggressive strategy to improve its libraries. The Department's vision is for libraries to be modern information hubs with Internet access, that promote educational advancement through lifelong learning, and where people can relax and read their hometown newspaper or favorite magazine. The Department operates 578 libraries of which 266 are land-based recreational libraries. Another 312 libraries provide services aboard ships and submarines. The Department continues to build and renovate libraries and add alternative opportunities for lifelong learning through use of the Internet and other delivery methods. The Department is adding communication lines to increase Internet access, computer hardware access to include CD-ROM drives and software, and access to standard library databases and computer systems that interface with other government and public libraries.

- Ensure that MWR programs are funded with the right levels and types of funds. To ensure that program management encourages efficient operations, the Department conducted an evaluation of the results of the congressionally-directed Uniform Resource Demonstration (URD) Project. The project allowed appropriated funds authorized for MWR programs to be spent using the laws and regulations applicable to nonappropriated funds. This test was conducted at six installations. DoD found that implementation of the URD concept yielded overall positive results for MWR programs and supports continued pursuit of the unified funding concept on a larger scale.

- Improve MWR management. MWR programs are arranged in three categories: Category A – mission sustaining activities, Category B – community support activities, and Category C – revenue generating activities. Programs receive appropriated fund support based upon their relationship to the military mission. In 1995, the Department established funding standards to ensure an adequate appropriated fund base for these programs. The military departments have made steady progress in achieving these standards. MWR accounts increased overall by $47 million in the FY 2000 budget.

- Continue robust MWR support of deployed forces. DoD is committed to continuing robust MWR support for its deployed forces. MWR specialists in Kosovo established temporary fitness and television areas, and the Army and Air Force Exchange Service stores are providing for service members' basic needs.

## COMMISSARIES

The Defense Commissary Agency (DeCA) operates a worldwide system of over 290 commissaries that provide quality groceries at cost, plus a 5 percent surcharge, to active duty military members, retirees, members of the National Guard and Reserve (limited access), and their families. In 1999, DeCA successfully expanded commissary access for reservists from 12 to 24 visits per year. Important to both recruiting and retention, the commissary provides military members and families a sense of belonging, average savings of 25 percent, and are consistently cited as major factors in improving quality of life. Since its formation in 1992, DeCA has achieved major savings in appropriations without impacting the level of service or savings to the troops. DeCA has already significantly improved operating efficiency and continues to seek opportunities to lower costs and improve customer service. During 2000, the Department will complete a patron survey to identify the service and merchandise that commissary patrons most desire.

## MILITARY EXCHANGES

At home in the United States, or abroad, the exchanges meet the needs of service members and their families with a broad range of goods and services. Ranging from toothpaste to lawn mowers, from diapers to auto parts, and from hamburgers by the flight line to hot lunches in overseas DoD schools, the exchanges' products and services are there for America's military community. Much like business cooperatives owned and operated by service members, the exchanges' cash dividends help fund important MWR activities that enhance the quality of life of service members and their families. In FY 1998, the Army and Air Force Exchange Service funded $97.5 million for 33 major quality of life construction projects. To ensure DoD continues to provide the best exchange benefits possible, the Department chartered a definitive study to determine the benefits, costs, and requirements of integrating the operations of the three separate exchange systems. As the decisions resulting from this effort are made, in consultation with Congress, the Department will gauge its efforts by the most important criteria, whether they improve the exchange benefit for service members.

## RELIGIOUS MINISTRIES

Chaplains serve as a visible reminder of the holy. They provide for the free exercise of religion for all service members and their families. This includes offering worship opportunities, pastoral care and counseling, religious education, ministry of presence, and emergency and sacramental ministrations, both in accordance with their respective ecclesiastical endorsements and in accommodation of the religious rights and needs of all service members. Chaplains are the primary advisors to the military commander in the areas of religion, religious accommodation, and moral/ethical issues, and also assist in morale and quality of life matters. Essential to the life and work of military communities, the chaplaincy works in close coordination with family support, medical, and quality of life programs. The chaplaincy is an embedded and integral part of the operational structure and participates fully in global deployments and commitments.

## OFF DUTY/VOLUNTARY EDUCATION

The Department provides academic counseling, testing, and college degree programs through education centers on nearly 300 military installations around the world, thereby operating one of the largest continuing education programs in the world. In addition to classroom instruction, courses are available using various technology-supported modes of instructional delivery. Service members receive financial assistance to cover up to 75 percent of tuition costs. In FY 1999, the Department successfully implemented a uniform DoD-wide tuition assistance policy. For the first time, all service members, regardless of branch of service, received the same level of tuition assistance support. Participation in this program remains strong, with about 600,000 enrollments in undergraduate and graduate courses and 33,000 degrees awarded during FY 1999.

## DEPARTMENT OF DEFENSE EDUCATION ACTIVITY

The DoD Education Activity (DoDEA) operates 224 schools overseas and on military installations in selected areas of the United States, the Commonwealth of Puerto Rico, and the territory of Guam. For school year 1999-2000, DoDEA will educate approximately 110,325 students—74,348 in the DoD Dependents Schools (DoDDS) overseas and 35,977 in the Domestic Dependent Elementary and Secondary Schools in the United States. DoDEA supports the President's national education agenda through its 1995-2000 Community Strategic Plan by successfully raising educational standards and advancing the organization to new levels of excellence:

* Student Achievement. For the first time, it is possible to assess the performance of all students in DoD schools using the same standardized test.

DoDEA students performed well above the national average (50th percentile) in all subject areas at all grade levels.

- Closing the Gap. Tremendous progress is also being made in reducing the minority student achievement gap in DoDEA. Of particular note were fourth and fifth grade students who participated in the National Assessment of Education Progress test. DoDDS fourth graders ranked fifth among the 43 states for reading. DoDEA African American, Asian, and Hispanic students ranked among the best in the nation when compared to all minority students taking the test.

- Technology. DoDEA continues its implementation of the four pillars of technology (computers, connectivity, competence, and curriculum). DoDEA's funding strategy for the next three fiscal years focuses on installing full-school local area networks in every school.

- Full-day Kindergarten. Starting children in school early ensures greater student success in later years. DoDEA has committed additional funds to invest in student success by expanding full-day kindergarten to overseas schools over the next five years. This effort, which supports DoDEA's school readiness goal, requires facilities renovations, teacher recruitment, and training. Full-day kindergarten classes are in session at 43 DoDDS for the 1999-2000 school year.

- Reduced Class Size. DoDEA is taking steps to reduce class size to 18 students in grades 1-3. This is another major improvement that supports DoDEA's student achievement and safe schools goals. This initiative also requires facilities renovations, teacher recruitment, and training. The reduced class size initiative was implemented at 43 schools (18 overseas schools and 25 domestic schools) in the 1999-2000 school year.

- School Facilities Modernization. Because both the full-day kindergarten and reduced class size initiatives require major facilities renovations, DoDEA is using this as a springboard to modernize its school facilities. The Department is requesting $34.7 million for nine school construction projects in FY 2001.

## HEALTH CARE

The Department of Defense's health care responsibilities are complex and continually evolving. The Military Health System (MHS) serves 8.1 million beneficiaries and delivers health care worldwide in 98 hospitals and over 480 clinics. The MHS is committed to a philosophy of excellence in its dual mission to provide force health protection and quality, cost-effective health care benefits for all eligible beneficiaries. DoD requires substantial resources to accomplish its health responsibilities. The FY 2000 appropriation for the Military Health System is $16.7 billion, which represents 6.1 percent of the defense program.

### *Health Care Initiatives*

#### *DEFENSE MEDICAL OVERSIGHT COMMITTEE*

Health care throughout the nation is rapidly becoming a major budgetary consideration. Factors driving this heightened attention are many and often consequential. Within DoD, health care requirements and costs have intrinsic implications for all military operations. As a result, the Defense Resources Board directed formation of the Defense Medical Oversight Committee to provide oversight of the Defense Health Program and make recommendations to the Board on definitions of the health benefit and health resourcing issues.

#### *REENGINEERING THE MILITARY HEALTH SYSTEM*

The leadership within military medicine recognized the need for cultural change and significant improvements in operations, business practices, and beneficiary satisfaction. This recognition coupled with congressional direction in FY 1998 led to the development of a comprehensive plan, referred to as the High Performance MHS Optimization Plan, which will be phased in over a five-year period. Military Treatment Facility (MTF) optimization is the core of the plan. The MTF is the main focus of health care delivery, the foundation for medical readiness, and the most cost-effective source for delivering most health services. MTF optimization is dependent on enrollment, appropriate resourcing, and implementing a population health improvement strategy that shifts the focus of health care delivery from intervention to prevention.

#### *HEALTH PROMOTION AND PREVENTIVE HEALTH*

The goals of health promotion and preventive health are a constantly fit and ready force, a benchmark health care delivery system, and healthy communities at home and abroad, in peacetime and in conflict.

The MHS, in seeking to reduce health risks and optimize health status for beneficiary populations, has:

- Begun using self-reported health status instruments.

- Implemented system-wide use of Put Prevention into Practice.

- Sought to meet and exceed Healthy People 2000 (2010) goals.

- Made great strides in maximizing individual and population health and fitness.

DoD also organized a flag officer level Prevention, Safety, and Health Promotion Council to help prioritize health and fitness objectives and implement DoD-wide plans to accomplish those objectives. Examples include deglamorization, reduction, and elimination of tobacco use; promotion of responsible alcohol use and elimination of alcohol abuse; reduction of non-battle injuries; and reduction and elimination of sexually transmitted diseases. Other initiatives include suicide prevention and the identification of combat stress and appropriate prevention and intervention strategies.

Two initiatives in which the Department has taken action are the policy for hepatitis C and the Global Emerging Infections System (GEIS). Instead of a Total Force mandate to screen for the hepatitis C virus, DoD applied scientific evidence and promulgated sound public health policy based on national policy as established by the Centers for Disease Control and Prevention (CDC). This evidenced-based approach showed that in the military targeted screening would be most effective.

Since 1996, GEIS has served as a centrally coordinated tri-Service program that improves DoD epidemiological capabilities. The GEIS five-year strategic plan that parallels the five-year plan developed by the CDC has four goals: surveillance; systems research, development, and integration; response; and training and capacity building.

### TRICARE

TRICARE is the military's health care benefit program that combines military and civilian resources into a regional, integrated health care delivery system.

The TRICARE Management Activity (TMA) was established on February 10, 1998, by the Defense Reform Initiative as a major reengineering of the management of the Department's health care benefit program. This initiative separated operational activities from the corporate-level policy and oversight role of Office of the Secretary of Defense. TMA is responsible for improving and enhancing the implementation of TRICARE worldwide and for ensuring the availability and affordability of high-quality, accessible health care to DoD beneficiaries.

Improving military health care is the number one priority of the Chairman of the Joint Staff and the Secretary of Defense. The FY 2001 President's Budget adds funding for two new benefits for active duty family members. TRICARE Prime remote will improve access to health care and lower out-of-pocket costs to active duty members who do not live near military treatment facilities. Also, co-pays for all active duty family members will be eliminated.

Significant improvements implemented in 1999 include enhanced benefits, reduced beneficiary costs, improved program administration, and expanded TRICARE Family Member Dental Program overseas. More TRICARE improvements are proposed, including initiatives to:

- Eliminate co-payments for active duty family members enrolled in TRICARE Prime and receiving civilian care.

- Expand TRICARE Prime Remote to active duty family members living far away from military treatment facilities, which will improve their access to care and cut their costs.

- Improve contracting practices to enhance access to care, ease enrollment, and provide a more uniform benefit.

- Optimize the utilization of military treatment facilities to bolster medical readiness and increase access to such facilities.

### DEMONSTRATION PROJECTS FOR SENIOR BENEFICIARIES

DoD, in recognizing its commitment to offer a health program for military beneficiaries aged 65 and older, is exploring and testing several viable options. Ongoing demonstrations include TRICARE Senior and the Mac-Dill project. Three additional demonstrations will begin in FY 2000: enrollment in the Federal Employee Health Benefits Program, TRICARE as a supplement to Medicare, and enhanced pharmacy coverage.

With full implementation of these demonstration programs in 2000, DoD will have projects in place in 20 locations, affecting about 100,000 over-65 military beneficiaries. From these demonstrations, the Department will evaluate beneficiary satisfaction, program costs and feasibility, and other factors to determine the best approach for meeting the health care needs of the military's Medicare-eligible beneficiaries.

### RESERVE HEALTH CARE ISSUES

Health care has been a significant concern of reserve component members and their families. Guardsmen and reservists want to be assured that if they are injured or become ill while performing military service they will receive medical and dental care and that their family will have access to health care as authorized by current law. Recent legislation regarding access to health care and fair and equitable treatment with respect to possible out-of-pocket expenses provides that assurance.

The Secretary of Defense can now authorize reserve component members to be called to active duty with their consent in conjunction with a DoD health care study, to be evaluated for disability or to receive authorized medical care. Additionally, reserve component members may be ordered to active duty with their consent to receive medical care for an injury, illness, or disease incurred or aggravated during inactive duty training. Also, the Department has been authorized to combine the Selected Reserve dental plan, which suffered from low enrollment because of the limited scope of covered services, a small provider network and lack of a family enrollment option, with the active duty family member dental program to address the problems. Finally, the Secretary of Defense now has the discretionary authority to waive the TRICARE Extra and Standard deductibles for reserve component members called to active duty for less than one year in support of a contingency operation.

### INFORMATION MANAGEMENT TECHNOLOGY

The MHS Information Management/Information Technology Program continued to be a leader in terms of implementation of provisions of Y2K preparedness and delivering effective information technology products to the field. The MHS Year 2000 Program made particularly noteworthy accomplishments including:

- Completed on time the repair and fielding of all MHS managed information systems.

- Joined with the Food and Drug Administration and the Department of Veterans Affairs to provide biomedical equipment Y2K compliance information for medical institutions' use worldwide.

- Partnered with TRICARE contractors and electronic commerce—pharmaceutical suppliers to perform Y2K interface testing for mission critical processes.

The MHS Information Management/Information Technology Program brought together its acquisition, development, and maintenance functions under a single Program Executive Office. Significant resource savings and efficiencies resulted from this consolidation.

The program accelerated development and deployment of the computer-based Patient Record with initiation of alpha testing at Tripler Army Medical Center in Hawaii; worldwide deployment is projected to commence third quarter, FY 2000. Field-testing also began on the prototype for the Personal Information Carrier, a dog-tag style device that will allow collection and transmittal of critical medical information in a battlefield environment. Additionally, the Preventive Health Care Application, which supports the transition in military medicine from episodic to preventive care, was field tested at several military treatment facilities.

## CONCLUSION

The mission of DoD is to provide military forces trained and ready to deter war and, should deterrence fail, fight and win the nation's wars. The primary personnel mission is to attract, develop, and retain the high-quality service men and women and civilian employees who are essential to maintaining a high state of readiness and to treat service members and civilian employees fairly. Service members of all grades will continue to receive high quality, realistic training, exceptional educational opportunities, genuine equal opportunity, challenging worldwide assignments, and excellent advancement and leadership opportunities. The Department will continue to recruit the high-quality personnel necessary to keep U.S. forces ready and to maintain the proper mix of junior, mid-career, and senior service members.

A country's national security is only as strong as the people who stand watch over it. The United States, in the 21st century, will depend on a high-quality, well trained, highly motivated, and appropriately rewarded workforce comprised of service members and civilian employees. DoD's personnel and quality of life policies, programs, and plans support such a force and, in turn, make its personnel the strong link in the chain of national security.

# Part III
# Transforming U.S. Armed Forces
# for the 21st Century

BLANK   PAGE

# Chapter 11

# A STRATEGY FOR MILITARY TRANSFORMATION

The Department's transformation strategy, described in this chapter, aims to ensure U.S. military preeminence well into the 21st century. Much about the future security environment is uncertain, such as the identity of the nation's adversaries and the precise ways in which they will threaten U.S. interests. But much is already clear. A number of states will have the capability to threaten U.S. vital interests, through coercion, cross-border aggression, and other hostile actions. Other states will face internal humanitarian crises and ethnic conflict, which may require the U.S. military to respond quickly while minimizing risks of American and noncombatant casualties. Whether in the context of major theater war or smaller-scale contingencies, future opponents are likely to threaten or use asymmetric methods such as terrorism, cyber attacks on critical computer-based networks, and weapons of mass destruction in order to offset U.S. conventional superiority.

Transformed military forces are needed because the strategic environment is changing; they are possible because of the Revolution in Military Affairs (RMA). Technology, vastly changing the civilian world, is changing the military sphere as well. Exploited effectively, through innovative operational concepts and new organizational arrangements, new information systems and other technologies will allow U.S. forces to be smaller, faster, more agile, more precise, and better protected. In short, U.S. forces will be more capable of meeting the security challenges of the 21st century in order to protect citizens at home and project power abroad.

The Department is transforming its forces to meet future challenges through a clear strategy that integrates activities in six areas:

- Service concept development and experimentation efforts to develop and experiment with new operational concepts that make use of promising technologies to perform critical tasks.

- Joint concept development and experimentation to harmonize Service capabilities where possible and develop joint solutions where necessary to assure that future joint force commanders have the tools they need to meet key operational challenges.

- Robust implementation processes in the Services and joint community to rapidly identify the most promising new concepts and capabilities that emerge from experimentation and put them on a fast-track toward incorporation in the force.

- Science and technology (S&T) efforts focused on areas that can enhance U.S. military capabilities to meet projected challenges, with close ties between technologists, innovators, and warfighters.

- Efforts to encourage international transformation activities. The United States is most likely to operate as part of coalitions in executing the defense strategy. While U.S. forces may differ from those of partners in significant ways, DoD must assure there is combined interoperability in command and control and other capabilities critical for effective coalition operations.

- Exceptional people with the right skills for the 21st century and attitudes nourished in a culture that encourages bold innovation and leadership.

After describing the Department's vision for full-spectrum dominance in future warfighting capabilities, articulated in *Joint Vision 2010*, this chapter summarizes the efforts underway in each of the six areas outlined above.

## JOINT VISION 2010 AND FULL-SPECTRUM DOMINANCE

*Joint Vision 2010* provides a template for the Department's transformation efforts across all elements of the armed forces. It channels the Department's innovation, energy, and resources towards a single long-term goal: full-spectrum dominance, which requires U.S. forces that are preeminent in any form of operation, from peacekeeping to major theater war. U.S. forces must be able to prevail decisively against a wide range of future threats, including adversaries armed with weapons of mass destruction. American's strategic nuclear deterrent will remain essential for this purpose. However, conventional forces are less vulnerable and more lethal because they are able to concentrate combat power at the decisive time and place with less need to mass forces physically will also be required. Full-spectrum dominance focuses DoD's efforts on four new operational concepts which, enabled by information superiority and technological innovation, will yield military superiority across the full range of potential military operations—dominant maneuver, precision engagement, full-dimensional protection, and focused logistics.

- Dominant maneuver involves the multidimensional application of information, engagement, and mobility to employ widely dispersed joint forces to apply decisive force against an enemy's centers of gravity

to compel an adversary to either react from a position of disadvantage or resign from the conflict.

- Precision engagement provides the ability to generate discriminating lethal or non-lethal effects against a wide range of objectives or targets. Forces are provided near real-time information on the objectives or targets and will have the flexibility to rapidly assess the results of the engagement.

- Full-dimensional protection provides defenses for U.S. forces and facilities, from peacetime through crisis and at all levels of conflict. Achieving this goal requires a joint command and control architecture that employs a full array of active and passive defense measures.

- Focused logistics integrates information superiority and technological innovations to develop state-of-the-art logistics practices and doctrine. This will permit U.S. forces to accurately track and shift assets, even while enroute, thus facilitating the delivery of tailored logistics packages and more timely force sustainment.

*Joint Vision 2010* is not a specific goal for military capabilities in 2010, but instead a commitment to a path that will lead to dramatically improved capabilities to conduct military operations and to a revolutionary increase in future joint force effectiveness. The Department intends to update *Joint Vision 2010* as the exploration of the RMA continues. However, the Department will retain the *Joint Vision 2010* commitment to full-spectrum dominance for joint U.S. forces in the future.

## SERVICE CONCEPT DEVELOPMENT AND EXPERIMENTATION

Innovative and rigorous Service and joint concept development and experimentation are central to the Department's efforts to achieve dramatic military transformation. In order to be prepared for the challenges of the future, DoD must learn systematically not only from real-world operations, but also from experiments using wargames, computer-assisted simulations, and field trials that simulate future operational capabilities. History shows it has often been disastrous defeat on the battlefield that has prompted a military organization to change. A vigorous program of concept development and experimentation that pits future U.S. forces against simulated skilled, determined opponents allows the Department to create the needed stimulus for change. The opponents portrayed in these experiments must be innovative and effective. The expectation is that U.S.

vulnerabilities can be discovered in the context of these exercises and corrected before a future opponent can find and exploit such weaknesses in war.

Each of the Services has concept development and experimentation activities focused on its core competencies, with activities organized to explore capability improvements in the near-, mid- and far-term. They also have established battle labs that bring warfighters and technologists together to work on key areas of warfighting.

The Services' visions that guide concept development and experimentation efforts are consistent with *Joint Vision 2010* and its objective for forces that are smaller, faster, more agile, more precise, better protected, more rapidly deployed, and more easily sustained in the field:

- All envision forces capable of rapid deployment in crisis and decisive operations in combat.

- All depend on the integration of lethal and non-lethal effects from dispersed forces.

- All envision agile forces that can reorganize quickly in response to rapidly developing situations.

- All envision modern, responsive logistics and support systems that constantly monitor demand and supply, and a dynamic support pipeline to achieve much smaller deployed footprints.

- All depend on the exploitation of information technology to enable rapid, adaptive planning and operations in which deployed forces utilize the non-deployed information support structure via high-bandwidth Internet-like communications.

While the Services' visions and activities stress these common themes, they also reflect the unique core competencies and heritage of each Service.

### Army

The Army recently articulated a new vision of its future, entirely consistent with *Joint Vision 2010*. This vision calls for transforming Army forces toward an Objective Force that is strategically responsive and dominant at every point on the spectrum of future military operations. To achieve this goal, the Army plans to field

forces that are more responsive, deployable, agile, versatile, lethal, survivable, and sustainable. It is the synergy of these attributes that will enable the Army to meet its enduring strategic requirement to conduct prompt and sustained land force operations to protect the nation's interests. In support of its transformation, the Army, in conjunction with the Office of the Secretary of Defense and the other Services, will develop the capability to project and sustain a combat brigade anywhere in the world in 96 hours, a division in 120 hours, and five divisions in 30 days. These deployment standards will be realized over the next decade or more by moving all divisions to a common design that includes internetted command, control, communications, computers, intelligence, surveillance, and reconnaissance ($C^4ISR$) capabilities, dramatically reduced logistical footprints, and a common suite of vehicles that are 50-70 percent lighter than today, but just as mobile, lethal, and survivable as today's armored forces.

The Army is developing a comprehensive transformation campaign plan. An initial redesigned operational force capability (two brigades) is already being established at Fort Lewis, Washington. As these brigades are fielded to validate the operational capabilities and requirements of its future tactical units, the Army is also beginning the process of redesigning and fielding an Interim Force—a force with the characteristics of the Objective Force but within the constraints of available and emerging technology. This will require reengineering of tactical and operational headquarters and a reexamination of the total active and reserve force structure. Focused development, final selection, and the integration of leading-edge technologies into this force will be key to achieving the Army's transformation objectives. The Army's Training and Doctrine Command will continue to serve as the focal point for developing the concepts, doctrine, leader development, and materiel solutions required to field the Interim and Objective Forces.

Two parallel near-term efforts will support transformation to the Army Objective Force. Force XXI will continue the effort to integrate information age capabilities in the current force through selected recapitalization of existing heavy force systems, like the M-1 Abrams tank, the M-2 Bradley fighting vehicle, and the Apache helicopter, and measures to improve the survivability and lethality of the light force. These efforts focus on quickly taking advantage of new information age technologies in combination with significant organizational and

125

doctrinal changes to greatly enhance situational awareness at the operational and tactical levels and achieve advances in sustainability and readiness. They seek to provide a quantum improvement in the lethality, survivability, and deployability of these formations.

The Army's 4th Infantry Division (Mechanized) will be the first unit to field Force XXI capabilities and will undergo a capstone exercise in 2001 to validate the capabilities of the first digitized division. Restructured digital divisions like the 4th ID will have 25 percent fewer combat systems, but greater lethality through synchronized, precision fires and maneuver enabled by vastly improved knowledge of friendly and enemy dispositions. This force will also be smaller by approximately 3,000 personnel due to fewer combat systems and support force efficiencies.

The 10th Mountain Division is the Army's lead organization for developing ways to increase the tactical mobility, survivability, and lethality of light forces under Force XXI. Programs are underway to improve the effectiveness and efficiency of joint command, control, communications, computers, and intelligence; to enhance contingency force operations in urbanized terrain; and to improve the capability to conduct early entry operations. Moreover, this effort is integrated fully with United States Joint Forces Command's program for future warfighting concept development and experimentation.

The second element of the Army's transformation will be a refinement of the Army After Next (AAN) study effort for the far-term out to about 2025. Through studies, research, wargaming, and analysis, AAN is developing ideas and insights concerning future warfare, which inform the Army's leadership about warfighting concepts and capabilities required of the Objective Force. These studies and wargaming insights have and will continue to directly impact the emerging capability requirements for future ground combat systems, a joint transport rotorcraft, unmanned systems, $C^4ISR$, and combat service support. Over the next year, AAN will focus on implementing the Army's transformation strategy, specifically on the linkage between the Interim Force and the Objective Force.

Throughout its transformation, the Army will maintain the capability to fulfill its non-negotiable contract with the nation. While remaining ready to fight and win the nation's wars, the Army's first digitized and contingency corps will also remain fully engaged in shaping the international environment and responding to crises

at home and abroad short of major war. Ultimately, the light and mechanized formations of these corps will become key elements of the Objective Force, a force that will possess all of the best attributes of both, and be capable of the full-spectrum strategic responsiveness and dominance called for in the Army vision.

### Navy

The Department of the Navy's future vision of warfare is delineated in *Forward... From the Sea,* which identifies five fundamental and enduring roles: sea control and maritime supremacy, sea-based power projection to the land, strategic deterrence, strategic sealift, and forward naval presence. In the future, the Navy will perform these roles with vastly enhanced capabilities derived from a network of platforms, sensors, and information processing and analytical systems. Increasingly, mobile platforms such as Navy ships and small Marine units maneuvering ashore will benefit in the same manner as stationary units already in the network. The cumulative effect of these changes will be a shift from platform-centric to network-centric warfare, where 21st century naval engagements are characterized by speed of command rather than by attrition.

The Navy's Maritime Battle Center has been colocated with the Naval War College at Newport, Rhode Island. It is investigating techniques to increase dramatically the striking power of the Navy's ships and aircraft, tying them together under the overarching concept of network-centric warfare. For example, as a result of the Fleet Battle Experiment Delta conducted in the Far East in the fall of 1998, the Navy is already implementing an innovative solution to assist in providing responsive and lethal counter-battery fire and to suppress heavy concentrations of North Korean artillery and multiple rocket launches deployed near the DMZ. Linking its technologists closely with its warfighters and innovators, the Navy was able to apply its idea of network-centric warfare to the problem. The staff of the Maritime Battle Center and the Seventh Fleet worked to net Navy ship-based radars with Army land-based counter-battery radar systems near the DMZ. The netted sensors then sorted the data and fed it dynamically to the best-suited Army or air power shooter. This netting resulted in a projected four-fold increase in the effectiveness of the counter-battery fires.

In addition, Fleet Battle Experiment Delta addressed the problem of interdicting the anticipated seaborne infiltration of North Korean special operations forces tasked to attack targets in the South Korean rear area. It

employed concepts to integrate Army Apache helicopters, Air Force AC-130 gunships, and Air Force and Navy tactical air to mount attacks on the North Korean cushion vehicles. The Land Attack Warfare System (LAWS) tested in this experiment automated the detect-to-engage process, providing information on detection of enemy craft, ingress/egress progress and plans, status of friendly assets, and battle damage assessments. The Navy is following up on this experiment by moving LAWS quickly into a program to equip the fleet and has already fielded 29 prototypes. In addition, the Maritime Battle Center, now working with the Fifth and Sixth Fleets, is conducting additional battle experiments to refine and broaden the application of LAWS, with a new focus on counterforce operations against weapons of mass destruction sites.

The power of this network-centric approach to warfare was again demonstrated in the recent Fleet Battle Experiment Echo off the west coast of the United States in September 1999. This experiment tested new methods of projecting and sustaining naval power in littoral areas in support of expeditionary forces operations, in the face of asymmetric threats. The Navy discovered that it could improve significantly its ability to defeat small, quiet diesel subs by improving underwater situational awareness with common computer decision aids to manage the vast flow of information from diverse platforms. The Navy also investigated improvements to automated battlespace management when confronted with a dramatic increase in the number of targets and the challenges of accurate identification in the littoral environment.

The Navy has long sponsored an annual summer Global wargame at the Naval War College in Newport, Rhode Island. The 1999 Global wargame applied the network-centric warfare approach to future joint warfare in the context of potential conflicts in two regions of the world set in 2010.

### Marine Corps

The Marine Corps vision for future sea-based power projection operations is derived from the Department of the Navy's *Forward . . . From the Sea* and captured in two Marine Corps organizing concepts for future capabilities: *Operational Maneuver From the Sea* and Ship-to-Objective Maneuver.

In the past, amphibious operations moved through distinct phases, pauses, and reorganizations. In the future, Marine landing forces will move directly from their ships through and across the water, air, and land of the littoral battlespace to their objectives ashore uninterrupted by topography or hydrography, thereby achieving greater surprise and complicating the adversary's defensive operations.

*Operational Maneuver From the Sea* demands tactically adaptive, technologically agile, and opportunistic forces. Forces must be able to rapidly reorganize and reorient in response to changing tactical opportunities throughout the full spectrum of future operational environments, all while operating widely dispersed both at sea and ashore.

The most recent phase of Marine Corps concept development and experimentation, Urban Warrior, focused on military operations in urban terrain. While still exploring a comprehensive solution to urban warfare challenges, the Marines already have implemented lessons from this experimentation. Valuable small-unit wisdom derived from the various field experiments has been distilled in booklets on practical tactics, techniques, and procedures called X-files. These manuals are available to Marines and soldiers who may be called upon to conduct military operations in urban terrain, whether it be in the context of a major war or during peacekeeping or humanitarian assistance operations.

The Marine Corps recently established a series of RMA wargames, called Project Ellis, named in honor of Major Earl Hancock "Pete" Ellis who led pioneering work on amphibious warfare concepts in the 1930s. These wargames address the long-term future of amphibious assaults and follow-on operations ashore. Conducted at the Marine Corps War College, they focus on the 2020 timeframe and are intended to aid in preparation of future Marine Corps advanced warfighting experimentation on urban operations.

The Marine Corps' Warfighting Lab at Quantico, Virginia, leads the Corps' RMA efforts. The Warfighting Lab investigates and experiments with new concepts in six functional areas: maneuver, intelligence, fires, logistics, command and control, and force protection. Its latest large-scale experiment, Capable Warrior, explores maneuver, fire support, and logistical concepts associated with long-range operations conducted from a mobile sea base. The lessons from this and other experiments will permit the Marine Corps to take major steps toward realizing the potential of *Operational Maneuver From the Sea.*

## Air Force

The Air Force's *Global Engagement: A Vision for the 21st Century* calls for exploiting the RMA by combining information technologies, precision strike, and stealth capabilities to further develop modern air and space power. The vision establishes an imperative for fully integrating space-based capabilities into the nation's air, land, and sea operations across the range of contingencies, recognizing air and space as parts of a single seamless operational medium of aerospace, and capitalizing on the synergies of aerospace power.

Transforming the Air Force into an Expeditionary Aerospace Force (EAF) is central to the Air Force's vision. In the place of the Cold War construct of fighter wing equivalents, the Air Force is reorganizing many of its combat forces into ten Aerospace Expeditionary Forces (AEFs) that are versatile, tailorable, and highly responsive. Each will be capable of deploying a full spectrum of tailored air-to-air, air-to-ground, command and control, and support capabilities. This restructuring involves organizational, cultural, and operational changes designed to enhance the Air Force's warfighting capability. AEFs will be able to sustain operations with a reduced forward-deployed footprint by exploiting the seamless integration of information technologies.

Most importantly, the AEF construct will also allow the Air Force to develop a more predictable force rotation schedule for meeting long-term contingency commitments and specify those units that will be most ready to deploy rapidly to meet any crises that may arise during a given period. This, in turn, will improve force stability, reduce personnel and operating tempos, and allow integration of the reserve component with active forces for all operational commitments thereby addressing a central concern that has adversely affecting Air Force personnel retention.

The Air Force is conducting an annual series of Joint Expeditionary Force Experiments (JEFXs) to develop and evaluate new operational concepts and capabilities for the near- to mid-term needed to achieve its vision. JEFX-99, conducted at various locations throughout the United States in September 1999, simulated the short-notice deployment of an AEF to a forward theater, followed by live-fly operations to portray the initial stages of an early 21st century major theater war. The experiment demonstrated that a small forward Air Operations Center (AOC) with reachback capability to a rear AOC could accomplish the mission of a large forward AOC. This demonstrated the viability of the Department's broader ambition to reduce the size of the forces it forward deploys in theater during an operation and thus reducing vulnerability to attack. As a result of the exercise, the Air Force changed its procurement program and its AOC procedures and deployment plans. It will field in March 2000 an integrated command and control capability based on the Theater Battle Management Core System, and it is considering plans to carry out selected AOC operations in the rear for future operations, as was done in Bosnia.

The Air Force also carries out a series of future oriented annual wargames, with the mid-term wargame entitled Global Engagement. This wargame series is held in even years and is intended to illuminate the potential capabilities of joint aerospace power and alternative force structures in a timeframe 10-15 years into the future. During the odd-numbered years, it conducts Aerospace Future Capabilities Wargames that take a longer view, testing alternative concepts, systems, and force structures in warfighting environments 20-25 years into the future. The Aerospace Future Capabilities Wargames have produced a number of new aerospace concepts, including a stand-off warfare and reach forward command and control capability, which continue to be matured via follow-up analysis and subsequent wargames.

In addition, the Air Force has six battlelabs with the mission to rapidly identify and assess innovative operations and logistics concepts that improve the ability of the Air Force to execute its core competencies in support of *Joint Vision 2010*. The six battlelabs are: Air Expeditionary Force Battlelab, Command and Control Battlelab, Force Protection Battlelab, Information Warfare Battlelab, Space Battlelab, and Unmanned Aerial Vehicle Battlelab.

## JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION

Complementing Service efforts is a joint concept development and experimentation program that is well underway. The creation of the joint experimentation effort at the United States Joint Forces Command (USJF-COM) has been a singular transformation-related achievement for the Department of Defense. It assures that while robust RMA efforts are underway in the Services, there is also a strong joint perspective on concept development and experimentation. USJFCOM brings the perspective of the future joint force commander,

ensuring that the voice of the joint warfighter is heard and that powerful joint alternatives for meeting key operational needs have an effective advocate in the Department's deliberations. Joint experimentation is a critical source of the ideas and innovation necessary to transform the Department's military forces into a truly joint team.

## The United States Joint Forces Command

USJFCOM's Joint Experimentation Directorate, headed by a two-star director, is responsible for developing and assessing new concepts and capabilities in three related areas:

- Planning and executing joint operations, such as forcible-entry operations against an adversary intent on denying access to U.S. forces, a coercive campaign to compel an adversary possessing weapons of mass destruction to undertake certain actions, and peace operations conducted in concert with coalition partners.

- Conducting inherently joint missions and tasks that involve the integration of multi-Service efforts, such as attacking time critical mobile targets like theater ballistic missile transporter erector launchers, mobile surface to air missiles, armored forces, and battlefield command posts.

- Developing the critical enablers needed to support successful joint operations, including joint $C^4ISR$, combat identification, a common operational picture for all forces, and rapid, flexible logistics support.

### EXPERIMENTATION PLANS

USJFCOM's first five-year campaign plan focuses on developing an integrated concept for rapid decisive operations. This concept will enable future joint forces to strike earlier and harder than current capabilities permit. USJFCOM, using integrated concept teams, is developing strategies for testing new concepts of operations and new organizational constructs that effectively exploit advanced technologies.

USJFCOM conducted its first major joint experiment in 1999, focusing on attack of time critical mobile targets. This simulation-based experiment included examination of several potential intelligence, surveillance, and reconnaissance (ISR) systems, as well as dynamic tasking of both ISR sensors carried on manned and

unmanned aerial vehicles and precision fires from multiple Service platforms in attacking mobile theater ballistic missiles launchers. In early summer 2000, USJFCOM will conduct a follow-on experiment expanding the effort to include attacks against mobile air defense systems and command posts in the field.

Building on and integrating existing Service plans, USJFCOM will lead a major joint advanced warfighting experiment in fall 2000. Known as Millennium Challenge, this joint experiment will integrate major experiments by all four Services to test ways the joint force commander of the future can orchestrate the capabilities provided by Service components in order to conduct decisive forced-entry operations.

### CINC INVOLVEMENT IN CONCEPT DEVELOPMENT AND EXPERIMENTATION

As the DoD executive agent for joint concept development and experimentation, USJFCOM ensures the widest possible participation by other combatant commands. Joint experimentation efforts include functional and geographic commands from the very outset. USJFCOM's initiatives on joint attack operations against critical mobile targets now include interaction with the United States Strategic Command, United States Transportation Command, United States Space Command, United States Pacific Command, United States Central Command, and United States European Command.

An example of USJFCOM's close coordination with other combatant commands is their funding of United States Pacific Command's Virtual Information Center Quick Reaction Demonstration. USJFCOM is incorporating the knowledge learned from this exploratory effort into its overall investigation of joint interactive planning with the objective of enabling rapid collaborative planning between echelons within a joint command as well as between commands, supporting staffs, and outside agencies. The United States European Command sponsors the Joint Continuous Strike Environment advanced concept technology demonstration that supports USJFCOM's attack operations efforts. USJFCOM will incorporate the results of this demonstration into its recommendations for change to joint doctrine, organization, and technology.

## Advanced Concept Technology Demonstrations and Joint Test and Evaluations

Marrying new operational concepts with new technologies, advanced concept technology demonstrations

(ACTDs) are aimed at rapidly fielding near-term solutions to warfighters' needs—generally within two to four years. ACTDs represent DoD's approach to capturing and harnessing technology and innovation rapidly for military use at reduced cost. They require the sponsorship of a commander in chief (CINC) and are the principal means for regional CINC involvement in transformation. After the proposed ACTD solution to a military need has been designed, field-usable prototypes are made, tested, and then left with operational units after the completion of the experiment. Numerous ACTDs have been employed in real-world operations, including Operation Allied Force in Kosovo.

ACTDs have three principal objectives: gaining an operator's understanding and evaluation of the military utility of new technology applications before committing to acquisition, developing corresponding battlefield operational concepts and doctrine that make the best use of the new capability in the joint warfighting arena, and providing new operational capabilities developed during the ACTDs directly to the combatant forces as equipment leave-behinds. ACTDs focus on critical military needs as determined by the Joint Requirements Oversight Council and respond to those needs with near-term solutions based on mature or nearly mature technologies.

The evaluation of military utility by operations in the field is the heart of the ACTD process. The process begins with the development of potential conceptual and hardware solutions to identified military needs. Then, field-usable prototypes are fabricated in sufficient quantity to assess operational utility. This is typically accomplished by evaluating a minimum operational capability in field exercises against realistic opposing forces. The evaluation of utility includes effectiveness of individual units, suitability for use by troops, and overall impact on the outcome of the conflict. As a result of these exercises, the user is able to refine both the battlefield operational concept and the operational requirements for the system, as well as to assess the overall value of the proposed concept to the U.S. warfighting capability.

Thirty-nine ACTDs are now underway, with 18 having been completed. Eight ACTDs are planned for completion in FY 2000; planned results for FY 2000 are outlined in the FY 2000 President's Budget.

The Joint Test and Evaluation (JT&E) Program conducts development and operational tests and evaluations to improve joint operations. JT&E projects are jointly chartered by the Under Secretary of Defense (Acquisition, Technology, and Logistics); the Director, Strategic and Tactical Systems; and the Director, Operational Test and Evaluation. JT&E projects bring together two or more military departments to address warfighter requirements and improvements in areas such as interoperability of Service systems; command, control, communications, computers, and intelligence; joint operations; joint targeting; joint combat identification; missile defense; electronic warfare; joint tactics, techniques, and procedures; and testing methodologies. Models, simulations, testbeds, and various types of field testing are used to obtain and validate data with regard to key aspects of joint military operations as a means to improve U.S. joint capabilities.

## RAPID IMPLEMENTATION

The Department is committed to rapidly implementing winning concepts and capabilities that emerge from Service and joint concept development and experimentation.

The Services are investigating ways to quickly implement materiel and non-materiel changes that arise from their experimentation. One such effort is the Army's Warfighter Rapid Acquisition Program (WRAP). It is a fund of approximately $100 million per year that the Army uses to rapidly procure relatively low-cost but high-leverage systems that performed well in experimentation. The WRAP effort has reduced acquisition cycle time for systems procured by an average of 12 months. The Marine Corps and the Air Force are establishing similar rapid acquisition programs, starting in FY 2001 and FY 2002, respectively. In the future, the Department will consider whether such a rapid acquisition program is needed to rapidly implement new capabilities emerging from joint concept development and experimentation.

The Department is strengthening its processes to coordinate materiel and non-materiel changes including doctrine, training, education, and organizational configuration. Historically, DoD has modernized its equipment and then developed, vetted, and eventually made the other necessary changes as equipment was fielded. Today, with rapid and dramatic changes in technology, U.S. forces must orchestrate or co-evolve all of these elements of military capability simultaneously. Among the initiatives in this area are the Marine Corps' X-files,

pocket-sized manuals that summarize valuable lessons for tactics, techniques, and procedures learned from recent experimentation.

Concept development and experimentation efforts focused on the longer term, generally 2020 or beyond, can have important implications for the Department's S&T efforts. The Army, for example, has targeted S&T funds on the most promising capabilities identified by its Army After Next project. A prime example is the Future Combat Vehicle program to develop a much lighter but still survivable and highly lethal combat system—a concept that emerged out of Army After Next wargames over the past several years. The Army is working in conjunction with the Defense Advanced Research Projects Agency and industry partners to develop alternative designs, virtual prototypes, and performance analyses of relevant emerging technologies.

As the Department's joint concept development and experimentation program continues, it will generate proposals for both materiel and non-materiel change. The Secretary of Defense and the Chairman of the Joint Chiefs of Staff are committed to assuring that such proposals are given sustained visibility and implemented appropriately. USJFCOM will recommend proposed changes to the Chairman for validation. Approved proposals will be forwarded to the appropriate Services, CINCs, and defense agencies for implementation. The Joint Staff will continuously track the status of all recommended changes and provide reports to senior leaders. The Defense Resources Board, chaired by the Deputy Secretary of Defense and including the Vice Chairman of the Joint Chiefs of Staff, the Service Secretaries and Chiefs, and the Under Secretaries of Defense, will systematically review the disposition of recommendations from USJFCOM and seek the Chairman's assessment of implementation progress.

## SCIENCE AND TECHNOLOGY

New capabilities made possible by advances in science and technology often provide the spark for a fundamental transformation in military effectiveness. New information systems, married with technological advances in other key areas including stealth platforms, unmanned vehicles, and smart submunitions, are essential to the Department's efforts to exploit the RMA.

## *Pursuing the Critical Enabler: Information Superiority*

The U.S. military has a significant advantage today in information-based systems, including advanced sensors, assessment and planning tools, communications, and precision-guided munitions. Yet, the Department has only just begun to understand how significantly new information systems will change the way military operations are conducted. Much more dramatic transformation is on the horizon.

With the support of an advanced, C$^4$ISR common backbone, the United States will be able to respond rapidly and effectively to any contingency. Joint forces will achieve a state of battlespace awareness, in near real-time, that will be pervasive across the full spectrum of military operations, enabling the joint force commander to dominate any situation.

Just as much of the private sector worldwide has become increasingly connected through the growth of internetted communications, DoD is developing a complementary, secure, and open C$^4$ISR network architecture that will facilitate the development of revolutionary improvements in joint military capabilities. The six principal components of the evolving C$^4$ISR architecture for 2010 and beyond are:

- A robust multi-sensor information grid providing dominant awareness of the battlespace.
- A joint communications grid with adequate capacity, resilience, and network management capabilities to rapidly pass relevant information to commanders and forces and to provide for their communications requirements.
- Advanced command and control processes that allow the planning, movement, employment, and sustainment of globally deployed forces much more rapidly than in the past and that are faster and more flexible than those of potential adversaries.
- A sensor-to-controller-to-shooter grid that enables distributed joint forces to engage in coordinated targeting, cooperative engagement, integrated air defense, rapid battle damage assessment, and dynamic follow-up strikes.
- An information defense capability to protect the globally distributed sensors, communications, and processing networks from interference or exploitation by an adversary.
- An offensive information operations capability to penetrate, manipulate, or deny an adversary's

131

battlespace awareness or unimpeded use of its own forces.

In addition to building C⁴ISR capabilities to facilitate truly joint network-centric warfare, the Department is investing heavily to improve the information processing capabilities of current and planned weapon systems and platforms. Increasingly, this investment is being guided by the results of Service and joint experimentation efforts that are exploring how forces can achieve and exploit information superiority in order to dominate future adversaries.

## Linking Science and Technology Development to Warfighting

The Department has robust S&T efforts underway and is strengthening the ties between S&T and warfighting objectives. Because of the importance of a vigorous S&T effort to the long-term capabilities of U.S. military forces, the Department is committed to maintaining at least a constant real level of investment in this key area. The Department's investment in science and technology is executed through a partnership among the defense agencies, Service laboratories, universities, industry, and international partners.

The Department continues to strengthen the S&T strategic planning process and improve the S&T community's responsiveness to warfighting and acquisition customers. Four publications—the *Defense Science and Technology Strategy*, its supporting *Basic Research Plan*, the *Defense Technology Area Plan*, and the *Joint Warfighting Science and Technology Plan*—lay out the Department's science and technology vision, strategic plan, and objectives for defense planners, programmers, and those who develop defense science and technology. The *Basic Research Plan* presents the Department's objectives and investment strategy for DoD-sponsored basic research performed by universities, industry, and Service laboratories. The plan presents the Department's investment in ten basic research areas. The *Defense Technology Area Plan* looks across Service and defense agency investments and describes the Department's applied research and advanced technology development programs. To provide additional focus for the S&T investment, the Department developed five interdisciplinary areas intended to allow the Department to more fully benefit from emerging capabilities. These five focus areas are Chemical and Biological Defense, Hardened and Deeply Buried Targets, Smart

Sensor Web, Cognitive Readiness, and Information Assurance.

Rapid advances in several key technology areas are creating options for significant increases in warfighting and support capabilities. Published annually, the *Joint Warfighting Science and Technology Plan* is organized into 11 Joint Warfighting Capabilities Objectives (JWCOs), aimed at preserving and enhancing current U.S. warfighting advantages and combating adversary asymmetric capabilities that pose a threat to U.S. forces and/or U.S. military systems. The 11 JWCOs are information superiority; precision force; combat identification; electronic warfare; force projection/dominant maneuver and joint readiness/logistics and sustainment of strategic systems; theater missile defense; chemical-biological warfare defense and protection; countering weapons of mass destruction; combating terrorism; military operations on urbanized terrain; and protection of space assets.

## INTERNATIONAL ACTIVITIES

The Quadrennial Defense Review noted that although the United States must retain the capabilities to protect its interests unilaterally, it will be advantageous to act in concert with like-minded nations when responding to crises and conflicts. Acting in a coalition or alliance strengthens the political legitimacy of a course of action and brings additional resources to bear, ensuring that the United States need not shoulder the political, military, and financial burdens alone.

Building and maintaining effective coalitions also present significant challenges, from policy coordination at the strategic level to interoperability among diverse military forces at the operational level. Because coalitions will continue to present both important political advantages and significant military benefits, U.S. forces must plan, train, and prepare to respond to the full spectrum of crises in coalition with the forces of other nations. As the Department transforms U.S. capabilities via new technologies and operational concepts, careful design and collaboration will be needed to achieve this ambition. The United States must carefully identify capabilities that are particularly important to interoperability, including the command, control, and communications capabilities that form the backbone for combined operations.

NATO launched an important transformation-related initiative at the Washington Summit in April 1999. NATO's Defense Capabilities Initiative includes both a

NATO-centered and a nation-centered concept development and experimentation program. The NATO-centered effort will examine ways to enable a brigade-sized headquarters to exercise effective command and control over a division-sized force through the use of advanced information technologies and a flatter organizational structure. Under the nation-centered portion of NATO concept development and experimentation, experiments sponsored by one or more allies will be opened for broader participation by other NATO states, helping to ensure that the Alliance works together to move into the future.

In addition, the United States Joint Forces Command has established an integrated program to include allies, coalition partners, and friends in joint experimentation activities. By the end of FY 2000, representatives from some 20 countries are expected to be participating in this program.

Each of the Services has incorporated a program to improve force compatibility and interoperability with selected allied militaries in their RMA concept development and experimentation programs. The Army continues to expand its multinational interoperability through a variety of bilateral and multilateral fora. The Navy has been very active in assessing strategic sealift concepts with the United Kingdom and command, control, communications, computers, and intelligence interoperability with other high-tech navies. The Marine Corps involved the Dutch, British, and Australian marines extensively in its series of Sea Dragon experiments. For its part, the Air Force has been working with the air forces of the United Kingdom and Australia in the Navigation Warfare ACTD and has invited airmen from the United Kingdom, Australia, and Canada to participate in its Joint Expeditionary Force experiments and Global Engagement wargames.

## EXCEPTIONAL PEOPLE

The Department of Defense must recruit, train, and retain people with the broad skills and good judgment needed to pursue dynamic change in the 21st century. Having the right kinds of imaginative, highly motivated military and civilian personnel, at all levels, is the essential prerequisite for achieving success in the Department's ongoing military transformation.

The Department is targeting its efforts at three critical populations—young people with needed skills and attitudes, innovators, and current leaders. Each of these populations must be cultivated via slightly different strategies.

### Young People with Needed Skills and Attitudes

Young people with essential technical skills and broad leadership abilities must be recruited, promoted, and retained to have the 21st century military envisioned in *Joint Vision 2010*. Advanced technology and new operational concepts cannot be fully exploited unless the Department has highly qualified and motivated enlisted personnel and officers who not only can operate these high tech systems, but can also lead effectively in the highly complex environment of the future.

The Services have targeted initiatives to attract and retain individuals with the skills and attitudes needed for 21st century warfare. For example, to highlight key skills needed for the 21st century and assure that it is growing the talent that it will need in the future, the Army recently established several new functional career areas, including Information Systems Engineering and Information Operations. The Air Force is reviewing options for the development of a specialty code or special experience identifier to track individuals trained and experienced in information operations. Similarly, the Department of the Navy recognizes that it needs to keep the best young people, and particularly those with the initiative so necessary for success in the 21st century. For example, the surface warfare community is looking closely at how to restructure the division officer tours for its junior officers to promote creativity and innovation and take full advantage of new technologies.

There are also efforts underway to create a virtual unit within the reserve component staffed by information technology specialists to assist the active forces in developing capabilities and conducting various types of information operations.

The Department is also exploiting new technologies to improve the way it trains and educates personnel. The learning environment of the future will allow the Department to educate, train, and provide performance support to U.S. service members and DoD civilians, anywhere and anytime. It will focus on the student, taking knowledge to the individual via a global learning network. It will utilize a common framework for learning software and learning content that will provide opportunities for reuse and interoperability across computer platforms and organizations on an unprecedented scale. Learners will have a broad range of options

including distributed learning technologies, distributed simulations, embedded training capabilities, and intelligent systems designed to meet individual and situational needs. The future learning environment, with its emphasis on continuous, readily accessible opportunities for skill enhancement, will replace some of the traditional training and professional military education courses that exist today in the Department's education and training institutions and the operational community. Innovative use of information processes and computer network technologies will make the learning process better, faster, and cheaper, without increasing personnel tempo or degrading readiness.

*Innovators*

The Department is seeking to create an environment conducive to bold innovation. For one of the largest bureaucracies in the world, this is a daunting challenge. A vital part of the Department's transformation effort is encouraging real debate and the competition of ideas. DoD needs to make sure that the bureaucracy does not smother good ideas before they have a chance to develop and then compete effectively on their merits. DoD's concept development and experimentation programs must be open to new, sometimes radically different ideas from all sources, both from within and outside the Department of Defense.

The Department needs to assure that key participants and leaders in technology development, concept development, and experimentation are connected to the core operational and support communities. Service experimentation programs are relatively young. As time passes, the Department must ensure that people involved in these activities have good opportunities for promotion and selection to key command positions.

*The Role of Senior Leaders*

Senior DoD leaders—including the Secretary and Deputy Secretary of Defense, key members of the Office of the Secretary of Defense staff, and the Chairman of the Joint Chiefs of Staff, as well as the leadership of the Services—will guide the Department's efforts to establish an environment that encourages innovation and change. The history of successful military innovation shows clearly that senior leaders must directly support a transformation effort to ensure that it receives necessary funding support and talented personnel. These leaders must help foster a culture that actively encourages innovative concept development and true experimentation in a realistic, challenging environment, with

thorough vulnerability analysis and red teaming that simulates dedicated and capable adversaries. Moreover, one must be fully prepared to discover that some apparently promising new concepts and capability combinations will fail to achieve the desired results.

Senior leaders, both today and in the future, must also explain clearly to the public why DoD's military transformation effort is essential, and must work closely with Congress in order to pursue significant changes in the way U.S. forces are organized, trained, and equipped. DoD's pursuit of the Revolution in Military Affairs has the potential for far-reaching impact over time—on how U.S. forces conduct the full range of military operations.

## CONCLUSION

The Department is transforming its forces to meet 21st century challenges through a clear strategy that integrates activities in six areas: Service concept development and experimentation; joint concept development and experimentation; rapid implementation processes; science and technology efforts; international transformation activities; and recruiting, training, and retaining exceptional people.

Each of the six elements of the Department's transformation strategy is essential. Science and technology development is critical, but absent innovative concept and new organizational arrangements discovered through Service and joint concept development and experimentation, new technologies will not produce fundamentally new concepts for conducting military operations. Similarly, revolutionary ideas developed through concept development and experimentation will mean little unless effectively implemented by U.S. forces. Future military success also requires that the United States involve key allies and partners to ensure that it is able to operate effectively in future coalition operations. Recruiting, retaining, training, and enabling innovators and future leaders are the necessary prerequisites for success in each of the other elements of the Department's transformation strategy.

The Department of Defense must transform its forces to remain dominant—indeed, to remain relevant—in the dynamic and highly uncertain security environment of the 21st century. The Department's transformation efforts are well underway, and significant changes have already been undertaken. Much more dramatic changes are on the horizon.

BLANK   PAGE

# Chapter 12

# DEFENSE REFORM INITIATIVE

The November 1997 *Defense Reform Initiative Report* provided a strategic blueprint for the Department to adapt better business processes, pursue commercial alternatives, consolidate redundant functions, and streamline organizations. Since the 1997 report, significant effort and progress were made to bring competition and best commercial practices into the business of defense. The scope of the Defense Reform Initiative broadened over time while the priority and need for reform remained unchanged. Since launching the reform initiative, a Defense Management Council (DMC) of DoD leaders acting as the Secretary's Board of Directors and a panel of Chief Executive Officers from leading private sector corporations were established to provide advice about reform opportunities and implementation. DoD continues to meet reform challenges and make meaningful change that focuses on adopting 21st century business practices to meet the future needs of U.S. warfighters.

## BEST BUSINESS PRACTICES

DoD is adapting the management techniques and processes of world-class private sector leaders to change the way it does business. Examples include purchase cards, financial management reform, and electronic commerce.

### Purchase Cards

The National Performance Review and the Federal Acquisition Streamlining Act identified the purchase card as a major acquisition reform and expanded use of the card for federal procurements. In the six years since these actions occurred, DoD achieved internal savings, increased efficiency, and decreased workload.

DoD's purchase card program grew 1,113 percent in five years, from 800,000 card purchases during FY 1994 to 8.9 million during FY 1999. The card is the Department's preferred method of obtaining goods and services $2,500 and under.

Today, defense organizations obtain low-cost commercial goods and services within days rather than months. The contractual workload for these items decreased 76 percent during 1994 to 1998. Additionally, the manpower costs associated with this workload decrease as the card becomes the primary means for acquiring goods and services.

Banks that issue purchase cards to DoD offer financial rebates. From December 1998 through June 1999, the Department of Defense received over $12 million in rebates.

## Financial Management Reform

The Department is streamlining and overhauling its financial management business area to save money and ensure prudent decision making and superb customer service. Old, outdated finance and accounting systems are being consolidated and modernized. Processes are becoming increasingly electronic and paperless, while concurrently strengthening internal controls. New federal accounting standards are being implemented to enable DoD to earn unqualified (clean) audit opinions of its financial statements. See Chapter 13, Financial Management Reform, for details.

## Electronic Commerce

The Secretary and the Deputy Secretary of Defense have outlined a series of initiatives that will revolutionize DoD's business affairs by making DoD's current organization and business practices more agile, responsive, and efficient.

DoD is committed to integrating electronic commerce into every facet of DoD business using electronic commerce to cut across the entire spectrum of warfighting and functional business areas. The Department will eventually position DoD to function as a virtual enterprise that utilizes electronic commerce to support its global missions.

The Defense Reform Initiative is aggressively applying key business principles that industry has successfully used to become leaner and more flexible. Most of the Department's business affairs are paper intensive and, therefore, people intensive, expensive, and slow. The crushing weight of paper is felt in virtually every corner of DoD's business operations—from contract administration, to acquisition, to official travel services, and to accounting and finance. As a result, it is crucial that the Department rapidly transition to electronic commerce, reducing Departmental overhead and presenting a customer-friendly interface to private enterprises, including small businesses, that have found it difficult and expensive to do business with the Department.

Defense Reform Initiative Directive 43 established the Joint Electronic Commerce Program Office (JECPO) to develop the roadmap and facilitate transition to electronic commerce. Its creation marked the Department's commitment to integrating electronic commerce technology into every facet of DoD business and employing modern and widely accessible technology in various functional areas. Serving as the Department's electronic commerce facilitator, JECPO excelled in establishing a robust electronic commerce infrastructure for promotion of Internet-based business tools. JECPO's successes to date have been encouraging and are a testimony to the cooperation the organization has received from within the Department and from industry. Momentum has clearly been established and as technology evolves, all DoD organizations will integrate electronic commerce tools into their business and management practices.

Under JECPO's direction, the DoD Electronic-Mall (E-Mall) began with the expansion of the Defense Logistics Agency's E-Mall and now provides one-stop shopping from all DoD electronic and commercial catalogs. The commodity and service corridors contained therein allow DoD users virtually unlimited access to the goods and services needed to conduct operations. This DoD E-Mall provides a single point of entry and search capability across all Internet-based DoD electronic catalogs, as well as a growing number of commercial catalogs, for customers to buy both products and services. There are 2.3 million items in the E-Mall and FY 1999 sales reached $51.5 million.

A premier accomplishment of JECPO is its support of the DoD paperless contracting goal for all aspects of the contracting process for major weapons systems to be paperless in 2000. To facilitate the elimination of all paper-based contracting activities, the paperless contracting community is placing requirements, contracts, modifications, invoices, vouchers, and receiving reports on the World Wide Web. DoD accepted and is exceeding Vice-President Gore's National Performance Review goal of 50 percent paperless contracting transactions by 2000; 67 percent of the Department's transactions are currently paperless.

To support worldwide industry access to new DoD business needs, the new Business Opportunities Home Page (http://www.dodbusopps.com) was created for industry partners' use to identify all DoD solicitations, bid on those desired, and view awards that were made through the use of a single search engine.

Before conducting business with DoD, industry partners must be registered, which facilitates electronic

payment from DoD. To do this, JECPO created the Central Contractor Registration (CCR)—a central database containing DoD industry partners' procurement and financial information. The registration process is performed once for every business entity with annual renewals. The CCR is accessible on the Internet for registration and for inquiry to verify registration before making awards. Perhaps the most important feature of CCR is the ease of a small business to register and obtain or furnish information required to be a DoD business partner. Currently there are over 150,000 vendors registered.

On May 4, 1999, the Deputy Secretary of Defense hosted the Defense Reform Electronic Commerce Conference, attended by over 120 industry chief executive officers and presidents. A number of recommendations were made concerning issues of common concern to both government and industry. The key issues were information security for electronic business, performance measures for electronic business, incentives for adoption of electronic business, and software quality and interoperability management. A group of government and industry subject area experts have been formed to tackle the issues. This group is called the Electronic Commerce Conference Working Group. This group will pursue resolving these issues over the next eight months and providing recommendations and an implementation plan to the Deputy Secretary of Defense in May 2000.

## QUALITY OF LIFE INITIATIVES

### Reengineering Travel

Defense Reform Initiative Directive Number 50 called for reengineering permanent duty relocation and reserve component travel. This directive presents DoD with the opportunity to improve the quality of life of Service members, civilian employees, and their families. One of the first tasks to be completed by the Defense Integrated Travel and Relocation Solutions Office is a comprehensive review and simplification of the entitlement policies that govern permanent duty travel.

Temporary duty travel administration is undergoing significant changes. The process of obtaining orders, initiating advances, and settling travel will soon be replaced by the Defense Travel System. This new, paperless travel system allows travelers to coordinate, arrange, and settle temporary duty business quicker and easier from the convenience of their computers. The pilot program for this system began in 1999.

Household goods transportation improved by modifying the Joint Travel Regulations to authorize military members up to 95 percent reimbursement for do-it-yourself moves. The Full Service Moving Project (FSMP) will apply best commercial business practices to the military move process by integrating numerous transportation and move management services previously accomplished by the military service member. The FSMP is being developed in partnership with industry in order to include all segments of industry in the acquisition process. Contracts will be awarded in early 2000 on a best value basis with full and open competition.

Because National Guard and Reserve members move in and out of a duty status frequently, the travel system must be able to respond to those changes. This presents additional requirements and challenges to incorporate reserve component members into the new Total Force travel system. A new DoD-level office has been created to facilitate reserve component integration into the Defense Travel and Transportation Reengineering initiative. This is crucial as the reserve components are integrated into active, multi-component and joint units.

## LOGISTICS TRANSFORMATION

To meet the challenges of *Joint Vision 2010*, DoD is transforming logistics from the mass model of the 20th century to a highly flexible, lean model for the 21st century. Building on the commercial sector's logistic successes of world-class performance, DoD envisions integrated supply chains that focus on meeting warfighters' requirements at the point of need. To meet these requirements, DoD is moving to replace a large infrastructure with information and rapid transportation, reduce cycle times based upon commercial practices, and limit echelons within the process that clearly demonstrate value.

The Services and the Defense Logistics Agency are making significant progress reducing supply inventory by improving equipment reliability, reducing logistics cycle times, selectively outsourcing weapon system support and functions, reducing supply retention levels, and shipping items directly to the end user by the vendor. DoD will continue to review and optimize logistics processes at all levels, adopt commercial solutions reflecting best industry practices where appropriate, and develop a cohesive, web-based, integrated logistics information environment. While these efforts are proving

to be cost effective and efficient, the time has come to take the next step and provide the warfighter with real-time logistical situational awareness.

To this end, the Department, in conjunction with the Joint Chiefs of Staff, Services and defense agencies, has identified four intermediate objectives. These objectives are to:

- Accelerate the implementation of Customer Wait Time as a key logistics measurement using variance based metrics in FY 2001.

- Adopt a simplified priority system by FY 2002 that provides time-definite delivery driven by the warfighter's required delivery date.

- Achieve accurate total asset visibility through the use of automatic identification technology, automated information systems, and transformed business practices by FY 2004.

- Field a web-based, shared data environment providing seamless, interoperable, real-time logistics information by FY 2004 to early deploying forces and by FY 2006 to the remainder of the force.

These logistics transformation objectives will significantly improve logistics response and assist the warfighter in making timely and confident decisions.

## STREAMLINING INFRASTRUCTURE

DoD's efforts to streamline the costs of operating required infrastructure and eliminating unnecessary facilities continue to progress. Enhanced leasing of excess facilities, improved utilities and energy management, demolition and disposal of excess buildings, and housing and utilities privatization have shown progress but require additional focus. Base Realignment and Closure (BRAC) is the single most important reform initiative; it shrinks DoD's infrastructure to meet 21st century needs and promises the greatest savings. Dollar savings from BRAC are critical to higher priority programs such as modernization and military readiness.

DoD is conveying utility systems to the private sector and will create a single, coordinated DoD-wide program to optimize the complex relationship between utilities privatization, energy conservation, and purchasing. DoD plans to privatize all utility systems, except those with unique security requirements and those in which privatization is not economical. Currently 194 systems are privately owned and operated, with 2,419 systems

being considered for privatization. DoD is also reducing consumption by upgrading existing buildings with energy efficient systems and using new sustainable design techniques to increase energy efficiency of new construction.

## COMPETITIVE SOURCING

Competitive sourcing is a critical enabler for defense reform that examines functional processes and procedures and provides market mechanisms to improve quality, reduce costs, and respond to customer needs. Savings that result from competition are necessary to reallocate funding to meet the needs of the warfighter. The Office of Management and Budget's Circular A-76 and its Supplemental Handbook provide procedures for determining whether commercial activities should be performed within DoD, by another federal agency, or by the private sector.

In 1999, the Department refined its competitive sourcing program to include Office of Management and Budget's Circular A-76 procedures to conduct full competition of commercial activities and non-A-76 processes such as consolidation, restructuring or reengineering of activities, or termination of obsolete services and programs. The FY 2001 budget provides for studying over 245,000 positions between FY 1997 and FY 2005. Through FY 2000, over 181,000 positions have been competed or are under study. DoD expects this process to save approximately $11.7 billion from FY 1997 through FY 2005 with annual recurring savings reaching $3.5 billion.

The Department has also conducted three non-A-76 competitions for the disposition of major depot maintenance workloads at San Antonio and Sacramento Air Logistics Centers. These workloads included the C-5, A-10, and KC-135 aircraft and TF39 instruments/electronics commodities. About $2.6 billion is expected to be saved during the life of these contracts.

### Public-Private Partnerships

To carry out responsive and efficient depot-level maintenance, the Department entered into partnerships between public depot maintenance activities and private sector contractors. These partnerships improve capacity utilization, reduce the cost of depot-level maintenance, and increase readiness. Of the 21 major DoD depots, 17 are actively participating in partnerships. There are 54 partnerships which are now operating or have been recently completed, and another 28 are

planned. The value of these partnering relationships is worth about $500 million annually.

## INSTITUTIONALIZING REFORM

Through proactive and unrelenting reform, DoD is changing the way it does business. Reforming DoD's business practices is essential to improving stewardship of its fiscal resources and must not become passe. Just as industry changed its business operations to be competitive, so too must DoD continually upgrade its business operations to effectively support future national security strategies. The needs of warfighters, the technologies that support them, the nation they defend, and the world they operate in constantly change. The Department's business practices must be flexible enough to meet those changing needs and maintain the superiority of its world-class warfighters. The commitment to continuously upgrade DoD business operations, stay abreast of practices in the corporate world, develop state-of-the art systems, and explore new ideas is imperative. Defense reform must continue to be a priority of every defense leader. To institutionalize reform as a fundamental approach to conducting business, the Department is defining the next steps in defense reform. DoD is acting on General Accounting Office (GAO) recommendations to establish metrics and performance scorecards that monitor achievement of reform. In 2000, the Department will identify goals and begin measuring success that the DMC will review. DoD will identify, test, and advocate new cutting-edge business practices. The DMC will champion needed reform, change policy when needed, establish goals, and monitor success. The Department is committed to working with Congress, GAO, and industry to institutionalize reform and continuously improve the business of defense. The current continental United States Strategic Lift Committee is an excellent example of DoD, the Joint Chiefs of Staff, and industry teaming to solve the mobilization and transportation requirements shortfall.

## CONCLUSION

Taking advantage of lessons learned in private industry facilitated the Department's ability to lay out a sensible road map for improving efficiency and reducing costs. Although applying these lessons from private industry is not always easy, the urgency to do so is highlighted by DoD's aging equipment and the availability of new technology. Competition, elimination, and reengineering are not the only answers, but are essential ingredients to defense reform. The Defense Reform Initiative continues efforts to build a new and more flexible Department to address the challenges of the future.

BLANK   PAGE

# Chapter 13

# FINANCIAL MANAGEMENT REFORM

The Department of Defense is continuing the vigorous transformation of its financial management operations, processes, and systems. The goal is to ensure that DoD financial management fulfills the information needs of decision makers, satisfies statutory requirements, eliminates fraud and waste, and provides superior customer service. Actions to advance these goals and a comprehensive new concept for financial operations are summarized in this chapter and in the Department's Financial Management Improvement Plan, available at http://www.dtic.mil/comptroller.

In its financial management, DoD is transitioning from a time when many DoD component organizations had their own pay and accounting systems, most of which were incompatible with each other. Virtually all DoD component accounting systems were designed to account for how money appropriated by Congress was spent, not to incorporate generally accepted accounting practices prevalent outside government or to provide meaningful management information.

Once fully transformed, the Department's financial management will rely on a minimum number of modernized finance and accounting systems, adhere to government-wide accounting requirements adopted in the last several years, and reap the benefits of substantial compatibility among its financial and non-financial systems. DoD decision makers will have the fullest availability of data on costs—so that they can allocate resources most wisely. Decision makers also will be able to make the best assessment of how well funds are achieving their intended purposes. Finally, more accurate and timely financial services will be provided at the lowest achievable cost.

## CONSOLIDATION OF OPERATIONS AND SYSTEMS

### DFAS and the Consolidation of Financial Management Operations

Since its activation in January 1991, the Defense Finance and Accounting Service (DFAS) has been the Department's pivotal agent for financial management improvements. By consolidating over 330 financial management field sites into five DFAS centers and 20 operating locations, the Department has been better able to eliminate redundancy, facilitate standardization, improve and speed up service to customers, and increase productivity. Through consolidation and reform, DFAS has generated savings in operating costs totaling about $1 billion since 1991.

## Consolidation of Finance and Accounting Systems

DFAS manages two types of DoD financial management systems—finance and accounting. Finance systems process payments to the Department's military and civilian personnel, retirees, annuitants, and vendors and contractors. Accounting systems record, accumulate, and report financial activity.

As of October 1999, 98 finance and accounting systems were operating—down from 324 in 1991. Finance systems have been reduced to 15, with a goal of only nine by FY 2003. Accounting systems are down to 83, with a goal of 22 or fewer by FY 2003.

These consolidations achieve genuine benefits. For example, in bringing into a single system all of DoD's one million civilian payroll accounts, 26 separate systems were eliminated and 348 payroll offices closed. In 1999, a typical civilian payroll technician handled over 2,100 accounts, compared to 380 accounts in 1991.

## Expanding Competition to Improve Services and Reduce Cost

DoD financial managers are participating in the Administration's effort to use competition within the government and with the private sector to improve support services and save money. In 1996, DFAS began selecting certain finance and accounting functions to be considered for competitive sourcing. DFAS has identified over 85 percent of its personnel as available for competition and has committed to study over 6,000 positions during the next five years.

## STRENGTHENING INTERNAL CONTROLS

### Internal Controls, Information Assurance, and Fraud Detection

To strengthen internal controls and elevate fraud awareness, DFAS is improving its processes by implementing a single standard general ledger; an integrated database for finance and accounting functions; and automated measures for costs, performance, and other outputs. These actions will provide a single, consistent set of policies and procedures for financial transactions, as well as safeguards for the verification and preservation of

assets. DFAS and other DoD organizations also continue to implement information assurance programs and fraud detection and protection measures. Efforts include better controls to reduce vulnerability and improved employee fraud awareness training. DFAS recently formed a Fraud and Internal Control Office to help ensure that programs achieve intended results, laws and regulations are obeyed, resources are appropriate for a program's mission, data is reliable, and fraud and mismanagement are prevented.

## Contractor Payments and Audits

To improve its contract payment process, the Department now allows for the submission of vouchers (requests for payment) directly to DFAS by approved contractors. Previously, such vouchers had to be reviewed by the Defense Contract Audit Agency (DCAA) prior to being submitted to DFAS. This reform saves substantial staff and processing time without putting accountability at risk, as DCAA continues to provide oversight through periodic reviews. DCAA is continuing to minimize costs without jeopardizing accountability by reducing its level of audit hours devoted to low risk contractors (i.e., those with good audit histories and no more than $10 million of annual reimbursable contracts). Such contractors are subject to audit only once every three years on a sampling basis. Additionally, to speed up audits and expedite the close-out of contracts, DCAA has begun concurrent auditing for contractors with good internal controls. By auditing transactions soon after they occur rather than after the end of the contractor's fiscal year, DCAA's work can be completed sooner, overhead rates settled more quickly, and contracts closed faster.

## IMPLEMENTING NEW FEDERAL ACCOUNTING STANDARDS

The Department is taking aggressive action to implement new federal accounting standards. This requires overhauling DoD-wide management information and both a long-term and short-term strategy.

The long-term strategy is, through reengineering or replacement, to ensure that DoD financial systems can implement new federal accounting standards and that they interface with the Department's other financial systems as well as the non-financial systems that feed data to them. Only 20 percent of the information needed for sound financial management originates in systems under the control of DoD's financial community. The remainder comes from non-financial feeder systems—most notably from acquisition, logistics, medical, and

personnel systems. It is an enormous challenge to upgrade those feeder systems to produce the needed information and to improve their interfaces with DoD financial systems—especially since the primary purpose of those non-financial systems is to support U.S. military forces and people, not to produce financial data.

Short-term, the Department is developing interim methodologies to achieve acceptable results in its major accounts sufficient to support a more favorable opinion on DoD financial statements. For example, the Department has hired respected private accounting firms to assist in the valuation of its property and in the development of new procedures on accountability. The Department also is working with the audit community to develop more detailed policy guidance to assist DoD components in identifying and reporting information needed for better financial statements. Interim actions likewise are being advanced to overcome gaps or problems in current information flows. All these actions are being done in partnership with the Office of Management and Budget, General Accounting Office (GAO), and DoD Inspector General.

## ADOPTING BEST BUSINESS PRACTICES

A critical aspect of the Department's financial management reform is to exploit successful business practices from both the private and government sectors. The goal is to make DoD business practices simpler, more efficient, and less prone to error.

### *Improving the Exchange of Financial Information*

DFAS is promoting the paperless exchange of financial information through a variety of initiatives. Electronic document management (EDM) and World Wide Web applications are enabling on-line, real-time access to documents needed to perform bill paying and accounting operations. Under this process, contracts, government bills of lading, and payment vouchers can be stored in an electronic file and shared among DFAS activities. Another application eliminates the printing of reports by converting them into an electronic format for on-line analysis, reconciliation, and reporting. EDM technology also is being used to enhance the control and management of documents needed for bill paying operations, regardless of the format of the document, as well as to link directly to DoD pay systems, which has reduced the cost of processing garnishment cases.

Electronic funds transfer (EFT) is being used extensively to reduce the cost of disbursements. Over 98 percent of DoD civilian employees and military members paid by the Department have their pay directly deposited into their accounts. The direct deposit participation rate for travel payments now is up to 94 percent. In FY 1999, EFT accounted for about 90 percent ($63 billion) of the total contract dollars disbursed by the Department.

DFAS is using Electronic Data Interchange (EDI) to send remittance information directly to vendors and currently is processing EDI contracts and contract modifications into its finance and accounting systems. DFAS also has implemented a Web-based invoicing system, which provides industry with an economical method to submit electronic invoices.

Through its Joint Electronic Commerce Program Office, the Department has fielded the Web-based Central Contractor Registration (CCR), a single database of basic business information from contractors that want to do business with DoD. CCR provides all DoD procurement and payment offices with a single source of valid and reliable contractor data. The CCR capability also helps DFAS capture required data up front, enabling it to exchange EDI and pay via EFT.

The Department also is implementing the Defense Cash Accountability System (DCAS), through which disbursement voucher data will be collected electronically under one central system and distributed electronically for posting to accounting systems. DCAS will reduce the DoD disbursing cycle from over 90 days to just two days.

### *Travel Reengineering*

The Department continues to reengineer its management of travel by DoD personnel. The goal is a more efficient, customer-oriented travel system that fully supports DoD requirements. Procedures have been simplified and refined as a result of extensive analysis and the conduct of pilots in various operating environments.

New DoD travel policies include expanded use of EFT to process travel settlements and greater use of a government-sponsored, contractor-issued travel card to pay for all official travel expenses.

*Digital Signature*

To help achieve the goal of paperless contracting, DoD leaders—working with the Departments of Commerce and Energy and GAO—developed a software specification that creates a digital signature that is compliant with federal standards. This initiative is being piloted and eventually will be available to all DoD personnel via a chip-enabled common access card.

*Information Infrastructure*

The DFAS Corporate Information Infrastructure (DCII) is being implemented to help modernize DFAS finance and accounting systems and to establish the information environment needed to support future DoD financial activities. DCII will support the use of common standard data for the collection, storage, and retrieval of financial information, and simplify and standardize DoD finance and accounting transactions. DCII also will integrate DFAS migratory and legacy systems, as well as feeder systems of DoD components. Included in DCII is an ambitious effort to standardize and share acquisition data. This will greatly improve the interactions between DoD procurement systems and the financial systems that process and account for payments of procurements.

## CONCLUSION

The Department's financial management reforms are continuing to cut costs and improve effectiveness by exploiting the best of private and government practices. Especially productive are the extensive use of consolidation, standardization, simplification, and advanced technology. The Department has achieved substantial progress and is fundamentally transforming DoD financial activities, as well as other functional areas with which those activities must interact.

# Chapter 14

# ACQUISITION REFORM

The Department has adopted a vision of becoming a world-class buyer of best value goods and services from a globally competitive, industrial base. To accomplish and maintain this vision, the Department must accelerate incorporating the attributes of world-class commercial entities into its processes for acquiring goods and services. These attributes include rapidly inserting commercial technology into products, basic business process improvements, creating a learning organization whose workforce is continually educated and trained to operate in the new environment, and institutionalizing improvements through change insertion. Acquisition and logistics reform, partnered with the Department's Defense Reform Initiative and the President's National Performance Goals 2000, is the Department's catalyst for and architect of continuous, integrated process improvement and change that provides the warfighter with goods and services better, faster, and cheaper.

## DEFENSE ACQUISITION GOALS 2000

The Department has identified 12 specific goals (Table 17) as the cornerstones of its National Partnership for Reinventing Government High Impact Agency efforts. Each goal identifies a measurable outcome with significant return to the Department in terms of reducing cost and time. Achieving the year 2000 goals will enable the Department to increase its investment accounts and realize required modernization without requiring a top-line increase in budget authority. The Department has already achieved 7 of the 12 year 2000 goals. The remaining goals are either on schedule, or ahead of schedule, for attainment in 2000. All goals but 6 and 8 (discussed in chapter 15) are addressed in this chapter. All of the data for the goals below are current as of September 30, 1999, except as specified.

### Goal 1

The Department needs to field new systems in much less time. A shorter acquisition cycle time will reduce cost growth and accelerate modernization efforts.

The goal is to reduce the acquisition cycle time of new programs by 25 percent. That means the average cycle time of new programs, which started since 1992, will be less than 99 months by the end of 2000—25 percent reduction from the recent historical average of 132 months.

Since 1992, the Department has employed acquisition reforms such as using commercial items and the latest

computer technologies in designing, manufacturing, and managing programs. They have helped reduce cycle time, but the Department has done more to reduce cycle time further. It has emphasized the use of shorter acquisition cycle time in approving new programs and closely monitors acquisition, programming, and budgeting to limit cycle time growth.

In addition, the Department is changing the way it manages programs in order to achieve shorter acquisition cycle time. Specifically, the Department is emphasizing the urgency of near-time requirements and the availability of proven technologies as key criteria in authorizing new programs. This means the Department can now satisfy warfighter needs incrementally—by infusing new technologies, as they become available, with each subsequent contract lot.

The Department has made significant improvements in reducing average acquisition cycle time. It has already achieved its goal of 25 percent reduction (i.e., 99 months). Department assessments as of September 30, 1999, show an average weapon system acquisition cycle time of 95 months for those major defense acquisition programs started since 1992. The reduction is largely due to starting more modifications and upgrade programs and to more fully employing regulatory reform, including specification streamlining, procurement reform, and integrated product teams in managing acquisition programs. The Department will continue its efforts to reduce cycle times even further.

| | Table 17 |
|---|---|
| **Defense Acquisition Goals 2000** | |
| Goal 1 | New weapons in less time. Deliver new major defense systems to the users in 25 percent less time. |
| Goal 2 | Improve logistic supply services. To achieve visibility of 90 percent of DoD materiel assets while resupplying military peacekeepers and warfighters and reducing average order to receipt time by 50 percent. |
| Goal 3 | Simplifying buying of goods and services. Simplify purchasing and payment through use of purchase card transactions for 90 percent of all DoD micropurchases while reengineering the processes for requisitioning, funding and ordering. |
| Goal 4 | Educating the defense acquisition workforce. Create a world-class learning organization by offering 40 or more hours annually of continuing education and training to the DoD acquisition related workforce. |
| Goal 5 | Modernizing defense. With no top-line budget change, achieve annual defense procurement of at least $54 billion toward a goal of $60 billion in 2001. |
| Goal 6 | In the spirit of fostering partnerships and community solutions, DoD will compete the disposal of 50 percent of the surplus property baseline and privatize 30,000 housing units. (See Chapter 15, Infrastructure.) |
| Goal 7 | Decreasing paper transactions. Decrease paper transactions by 50 percent through electronic commerce and electronic data interchange. |
| Goal 8 | Reduce total release of toxic chemicals by a further 20 percent. (See Chapter 15, Infrastructure.) |
| Goal 9 | Streamlining the workforce. Eliminate layers of management through streamlined processes while reducing the DoD acquisition related workforce by 15 percent. |
| Goal 10 | Providing improved visibility of total ownership costs. Define requirements and establish an implementation plan for a cost accounting system that provides routine visibility into weapon system life-cycle costs through activity-based costing and management. The system must deliver timely, integrated data for management purposes to: permit understanding of total weapon costs; provide a basis for estimating costs of future systems; and feed other tools for life cycle cost management. |
| Goal 11 | Reducing excess inventory. Dispose of $2.2 billion in excess National Defense Stockpile inventories and $3 billion of unneeded government property while reducing supply inventory by $12 billion. |
| Goal 12 | Minimizing weapons cost growth. Minimize cost growth in major defense acquisition programs to no greater than one percent annually. |

### Goal 2

Through continued development of the DoD Total Asset Visibility Program, the Department will have direct access to timely, accurate information about the status, location, and movement of units, personnel, supplies, and equipment in order to improve its support of the warfighter.

The Department is using automated information systems to reduce delivery times by increasing the volume of electronic, vice paper, transactions with vendors. Additionally, the Department plans to reduce order-to-receipt times by using commercial practices such as contracting with vendors to provide direct support, and using faster transportation services to deliver customer orders. All these steps enable DoD to meet the warfighter's needs more rapidly, while improving military readiness and reducing the size of the inventory.

The Department met its goal of better logistic supply services. Substantial gains have been made in providing cross-Service visibility of assets, and there has been significant reduction in the time it takes to deliver products to customers. In September 1999, inventory managers were able to track and identify 94 percent of the DoD inventory. The average number of days it takes for the warfighter to receive an order has decreased from 36 days in 1997 to the goal of 18 days in September 1999.

### Goal 3

A purchase of less than $2,500 is called a micropurchase. The Department has adopted the use of the government-wide commercial purchase card to allow users to purchase goods and services directly from vendors provided the amount is below the micropurchase threshold. Although the amount varies, every study has shown significant savings from using the government-wide commercial purchase card.

The September 1999 data shows the Department has already exceeded its 2000 goal and is using the government-wide commercial purchase card for 92 percent of micropurchases.

### Goal 4

The Department has undergone dramatic changes in how it buys goods and services. Many changes are based on best commercial practices. These practices are often very different from the way DoD performed jobs in the past. DoD offers quality education and training to help buyers adjust to this new environment.

DoD will meet the three-year goal of educating the defense acquisition workforce by having buyers take a mandatory 40 hours of continuing education annually, or 80 hours over two years. The Department is, however, rapidly expanding its use of computing and telecommunications technology to provide more cost-effective and timely training via satellite and the interactive environment of the Internet. Through the fourth quarter of FY 1999, 72 percent of the workers in the acquisition workforce have taken at least 40 hours of continuing education and training.

### Goal 5

After the Cold War, DoD decreased defense spending dramatically. This reduction was particularly significant in the buying of new weapons and equipment. Over the intervening years, however, the budget for buying new weapons was further reduced by unplanned events, such as regional conflicts, peacekeeping, and humanitarian missions.

Today, the defense inventory needs to be replaced. Since the level of technology used by potential adversaries has increased, DoD needs to continue fielding new weapons and equipment to maintain its technological edge.

To meet the Department's goal of modernizing defense, the annual budget for new weapons and equipment needed to increase to at least $54 billion in 2000 and $60 billion by 2001.

DoD is striving to achieve the goal of modernizing defense by fully implementing the recommendations of the Quadrennial Defense Review and continuing with the Defense Reform Initiative (DRI). The DRI provided that more money would be available for buying new weapons and equipment by better planning for operating and support costs, further cutting troop levels, reforming business practices, streamlining the workforce, and closing additional military bases.

The Department achieved both its $54 billion and its budgeted $60 billion goal in procurement funding in 2001.

### Goal 7

Industry is rapidly moving toward electronic commerce and electronic data interchange. DoD is setting up computer networks for all people, removing regulations and

149

other barriers to exchanging information electronically, and improving business practices to take advantage of information technology advancements.

The Department's goal for paperless transactions will improve efficiency and effectiveness, reduce processing times and costs, and provide more timely insight. The goal is to limit paperwork, provide timely payments, minimize repeated requests for the same information, make DoD information more accessible through electronic media, improve data accuracy, and make communications with industry easier and faster. DoD has a three-year effort to increase paperless electronic business transactions and improve business practices. The Department is capitalizing on electronic contracting, program management, and logistics support information. Within the contracting function, DoD has met its year 2000 goal. In 1997, 72 percent of transactions were paper-based. In September 1999, only 36 percent of contracting transactions were paper-based.

The business efficiencies of digital transactions will significantly reduce the total costs of owning, operating, and maintaining weapons and equipment. The Department is measuring progress and studying additional actions to better support the customer and save money. The Department is developing additional measures for progress in the digital program management and logistics support areas. DoD has demonstrated a completely paperless file of all the information used to purchase spare parts, demonstrated a paperless electronic exchange of engineering information between Navy engineers and spare parts managers at inventory control points, and achieved dramatic reductions in the amount of paper-reported maintenance actions. Several program offices have already implemented paperless operations, and the Department has developed plans to conduct paperless program management by 2002.

### Goal 9

Since 1989, DoD has reduced the acquisition workforce by over 40 percent. By streamlining organizations further, DoD will reduce its 1997 baseline workforce by an additional 15 percent by September 2000. DoD is resizing the workforce to match the workload more efficiently. The Department is eliminating redundant jobs and simplifying procedures.

By September 1999, the Department had reduced its acquisition manpower by about 14 percent since 1997.

Additional reductions in 2000 will achieve and exceed DoD's 15 percent goal.

### Goal 10

In 1995, DoD established total life-cycle cost as equal to performance with the promulgation of a Cost as an Independent Variable (CAIV) policy. Department efforts to fully implement CAIV have been hampered by limited visibility into true ownership costs. DoD currently relies on the Visibility and Management of Operating and Support Costs (VAMOSC) system to provide weapon system level cost insight; however, Services' differences in implementation and lack of process costs have previously limited the applicability of VAMOSC data on a department-wide basis.

Current near-term action is the development of a strategy and plan for DoD-wide implementation of activity-based costing/activity-based management (and/or other approaches deemed appropriate to the core objective of providing visibility into total operational costs). VAMOSC improvement activities are also being considered as a potentially significant contribution to increased management visibility of weapon system costs. The ultimate goal is to provide one or more systems together which will constitute a system that is not only comprehensive but also practical and accessible to ultimate users in 2000.

The military departments and defense agencies are preparing their respective implementation plans for the directed new cost accounting process. The plans will be submitted and DoD-wide implementation of the new process will begin at the start of FY 2000.

### Goal 11

The National Defense Stockpile is a large inventory of strategic and critical materials set aside for a national emergency. The market value of the 1997 stockpile was $5.3 billion. DoD can sell or otherwise dispose of excess inventory after receiving the proper authority from Congress. By law, however, DoD must try to avoid causing undue market disruption. The goal is to dispose of $2.2 billion in excess stockpile inventories by the end of FY 2000. As of September 1999, the Department had sold over $1.5 billion worth of excess strategic and critical materials. To achieve the goal, however, the Department will need new congressional authority for additional material as well as a continued robust world market. DoD is aggressively marketing its inventory of critical and strategic materials. The Department is

working closely with Congress and industry to ensure a good price for the inventory without unfairly undermining the commercial market.

The Department is also working to reduce the amount of DoD property held by defense contractors. DoD often loans contractors government tooling or equipment to perform defense unique tasks. Since the 1980s, the original value of property in contractor hands has grown in spite of repeated efforts to curb growth. The goal is to dispose of $3 billion worth by 2000. As of the fourth quarter of FY 1999, DoD has disposed of $4.57 billion in unneeded special tooling and equipment, surpassing its goal. In the future, to reduce the amount of government property held by contractors, DoD will rely on commercial suppliers to use their own equipment.

Finally, DoD is looking to reduce excess inventories to match the current needs of reduced troop levels. From a 1989 high valued at $107 billion, DoD inventories declined to $68 billion in 1997. The Department established a goal to reduce this even further to $56 billion by 2000. To reduce excess supply inventory, the Department is being more selective in what it buys and how it buys. DoD is improving equipment reliability, decreasing order and delivery times, and bypassing government warehouses. In September 1999, the Department's on-hand supply inventory was valued at $55 billion, meeting and exceeding the year 2000 Goal.

## Goal 12

The Department's goal is to minimize cost growth of major new weapons by achieving greater program stability. To control the cost growth, the Department is monitoring major weapons programs quarterly, focusing on cost growth when making programming and budgeting decisions, and looking closely at how much money programs are asking for in the program acquisition process.

The Department has effectively met the 2000 goal for two of the last three years. Based on the President's Budget submission, 1998 showed a slight cost growth of 0.1 percent. DoD actually had a slightly negative cost growth at minus three-tenths of a percent in 1999. In the 2000 President's Budget submission, DoD missed its goal, showing an overall cost growth of 3.1 percent, due primarily to unforeseen growth in several Army and Ballistic Missile Defense Organization programs. Projections for the President's Budget submission for 2001, however, indicate that the Department will once again

be below the 1.0 percent cost growth threshold with an overall cost increase of 0.9 percent.

## CHANGE MANAGEMENT

Since the establishment of the Defense Acquisition Goals 2000, the Department of Defense has undertaken a number of significant initiatives and has, in some cases, established additional goals. Each of the following sections describes those initiatives. The Department convened a study group to help implement a Section 912(c) of the National Defense Authorization Act for Fiscal Year 1998 recommendation to enhance commercial business environment education and training. The DoD study group's experience is summarized in the Department's report, *The Commercial Business Environment: Accelerating Change through Enterprise Teaming*. The group coalesced around a business model employed by world-class corporations to manage and accelerate change. The goal is to harness the Department's myriad improvement efforts, using the business model to transform the Department into a learning organization and fashion new cross-functional teaming roles. The study group recommended using this model in the acquisition context, then broadening its use after proven successes. The Department is currently engaged in several pilot programs to test one step of the business model, validating its effectiveness in communicating and implementing a vision for improving selected defense projects. The Department plans to expand the use of the business model in the future. In addition, the Department expects to develop a knowledge management infrastructure, which is another key aspect of the business model.

## CIVIL MILITARY INTEGRATION

Civil military integration is critical to meeting future military, economic, and policy objectives. In order to accomplish civil military integration of a national industrial base, DoD must be able to adopt the business processes of world-class customers and suppliers and stop applying government-unique terms and conditions on its contractors to the maximum extent practicable. Civil military integration objectives are designed to take acquisition reform to a new level and focus on the long-term emphasis on commercial solutions to military requirements. DoD has developed a strategic plan targeted at reducing that distinction and attracting commercial companies to the defense sector. This plan includes a set of initiatives, policy, and behavioral and cultural changes which together will enable the Department to achieve these goals.

## CYCLE TIME REDUCTION

The ability of the United States to preserve its technological advantage is at risk because modernization, modification, and logistics support cycles are so long. Because much of this technology is available commercially, potential adversaries may field it first. When DoD fields a new weapon system today, many embedded subsystems are obsolete. DoD cannot continue to have 10-year weapon acquisition cycles when the underlying technology becomes obsolete in two to five years or less. Similarly, DoD cannot afford logistics support cycles many times longer than the commercial counterparts.

DoD has established three objectives to drive cycle time reduction:

- The average systems acquisition cycle time (measured from program start to initial operating capability) for all program starts in FY 1999 and beyond will be 25 percent initially and 50 percent in the outyears.

- Logistics response time will be reduced from an average of 36 days (in FY 1997) to 18 days by FY 2000.

- Repair cycle times for end items and reparable parts will be reduced by 10 percent initially and 25 percent in the outyears. By FY 2001, DoD will establish a goal for customer wait time, a more accurate measure than reduction in cycle time for repairs, and begin reporting against it. The customer wait time goal will replace the cycle time reduction goal now being used.

Although many initiatives affect cycle time, the following two initiatives will be major contributors to achieving these objectives.

DoD will adopt a new approach to systems acquisition where price and schedule play a key role in driving design development. The Section 912(c) studies on Requirements and Acquisition; Command, Control, and Communication Integration; and Price-Based Acquisition, along with the Defense Science Board study of Integrated Test and Evaluation have identified a number of changes that must take place in the requirements, systems acquisition, and test systems to reduce cycle time. The warfighter must be in a position to place a dollar value on improved capability and choose among potentially dissimilar alternatives. Warfighter requirements must be flexible and respond to both the needs of the

user and the technological state of the possible, until a decision is made to enter product development and production. That decision will not be made until technology is mature and risks are understood. New products evolve incrementally, so that the warfighter has improved capability in each increment while a more flexible programming and budgeting system does not require the acquisition community to lock in design until two or more years in advance of technologies being available for use. Because of the incremental nature of design and the maturity of technology, products can be acquired using price rather than cost with a view towards incentivizing continual price reductions. A workforce that has extensive market knowledge determines fair and reasonable prices. Information is created and exchanged in an integrated data environment. The end result will be newer technology in the hands of the warfighter sooner. There will be fewer dollars idling in the acquisition pipeline.

DoD will transform its mass logistics system to a highly agile, reliable system that delivers logistics on demand. The logistics transformation effort is the critical link between modern warfighting and modern business practices. The Section 912(c) study on Product Support has shown that product support can be optimized as a strategic advantage by focusing on customer service, integrating supply chains, capitalizing on rapid transportation, and exploiting electronic commerce. When applied to Defense, this equates to integrated logistics chains focused on readiness and rapid service to the warfighter customer. Providers would be selected competitively based on best value. Long-term partnerships would be formed with a subset of preferred providers. Many products procured today can be replaced by the purchase of services so that the contractor is charged with keeping the product technologically current while the warfighter receives increasing capability with improved readiness. Program Manager insight into support costs can leverage the reduction in cost by identifying opportunities to improve reliability or move to the purchase of availability, even for legacy systems.

## EXPANDED SINGLE PROCESS INITIATIVE

Transitioning the Department to a Performance Based Business Environment, maximizing the use of commercial items and practices, is a key step toward achieving civil military integration. The Single Process Initiative (SPI) is the mechanism the Department has chosen to implement changes to existing contracts. Over the

past two and one half years, the SPI has expedited the transition of existing contracts to common best processes, making a positive impact on the way the Department conducts business, by facilitating industry consolidation and plant modernization, encouraging innovation, and encouraging subcontractor reform. While a solid beginning has been established with this initiative, particularly in the transition of at least 225 (up from 140 last year) facilities to the ISO 9000 quality standard, the Department has a long way to go. The replacement of multiple government-unique management and manufacturing processes with common, best, facility-wide processes that adopt best practices drawn from both commercial and government experience is an objective that requires a long-term vision.

The Principal Deputy Under Secretary of Defense (Acquisition, Technology, and Logistics) chairs an SPI Council, which includes the Component Acquisition Executives and representative from corporate management councils and industry associations, to facilitate this reform initiative. To date, this Council has approved a commercial packaging pilot at Allied Signal and General Electric, and chartered a commercial integrated product team to explore problems with commercial item implementation. This Council will ensure that cross cutting industry procurement reform issues get high-level management's attention.

DoD continues to emphasize integrating suppliers into a performance-based business environment as well. To assist in this integration, industry is working with the supplier base to facilitate supplier reform and acceptance of best practices. Additionally, several defense contractors have initiated corporate Single Process Initiative Management Councils designed to expedite reform and facilitate best practices. Councils serve to expedite the spread of common best practices among defense contractors and the sectors in which they operate, thus further facilitating the integration of the defense industrial base and improving access to best value goods and services. Accomplishments in Single Process Initiatives have resulted in significant benefits to the Department that include both actual savings and cost avoidances as well as non-monetary benefits such as improved response times, longer product mean time between failures, technology insertion, and general modernization of the items being acquired.

To date, SPI has involved more than 330 separate contractor facilities representing in excess of 1,722 proposed changes and 1,242 contract block change modifications. SPI empowers industry to capitalize upon the best of government or industry processes or practices and adopt a standard way of doing business that is mutually beneficial and cost efficient.

## GOVERNMENT PROPERTY

Reform of government property practices is an essential component of civil military integration. One of the Department's objectives is to establish an accurate accounting of current property assets while concurrently reducing the number of both new and existing assets. Defense Acquisition Goal 2000 number 11 stipulates the Department's goal for reducing the inventory of government property. To assist in attaining this goal, steps taken by DoD include establishing a policy designed to ensure that the Department ends the practice of taking title to special tooling and test equipment with an acquisition cost under $5,000 and all general purpose equipment, and permitting contractors to use commercial practices to manage government property in their possession. An Integrated Product Team has been formed to develop detailed implementation guidance for the Department that integrates financial and property management practices. In addition, new proposed regulations are being issued which will enable a significant streamlining of DoD's government property management practices, eliminate barriers those practices now present to commercial companies doing business with DoD, and facilitate rapid disposal.

## PAST PERFORMANCE

Confidence in a prospective contractor's ability to satisfactorily perform is an important factor in making a best-value source selection decision. One method of gaining this confidence is the evaluation of a prospective contractor's performance on recently completed or ongoing contracts for the same or similar goods or services. Past Performance Information (PPI) is very useful in motivating contractors to improve their performance because of the potential use of that information in future source selections. It is equally useful as a means of communication, providing feedback, and justifying additional performance incentives for ongoing contracts.

DoD policy is to collect PPI using a consistent management approach across the designated business sectors

categorized as key or unique. DoD has developed a guide for the collecting and using past performance information that includes established business sectors, common assessment elements, and ratings to standardize the methodology used to rate contractor performance under defense contracts. Buying activities share PPI, while ensuring it is managed as source selection sensitive information, with other government buying activities to the maximum extent possible.

Source selection authorities are given maximum latitude to focus on those specific areas of contractor performance that will provide the best predictors for successful performance of the instant acquisition. Evaluation of PPI is tailored to fit the needs of each specific acquisition. DoD is currently implementing an automated PPI retrieval system to access decentralized PPI data with Web-based technology.

## PERFORMANCE-BASED ACQUISITION

The President's Management Council identified performance-based acquisition as an initiative with significant potential payback to the federal government and one which has been identified by the National Partnership for Reinventing Government as being essential to increasing the efficiency of government.

As the Department moves into the 21st century, the amount of goods DoD buys will be greatly reduced. In addition to the increased use of service contracts, the services being acquired by DoD are becoming increasingly more complex. The increased reliance on service contracts will require the Department to significantly change the way it acquires services. The Department has begun moving from traditional military specifications and standard requirements to performance-based contract requirements. Performance-based contracting requirements move contract products and services to commercial solutions by focusing upon the purpose of the work to be performed rather than the manner in which it is to be performed. The next steps will involve addressing milspecification/standard reform for reprocurement items to facilitate logistics reform.

The Secretary directed formation of the 912(c) Services team to evaluate the future acquisition environment and determine the appropriate training and tools which the acquisition workforce would need in order to structure and procure services in the most effective manner. Performance-based requirements and the use of best commercial practices provide the Department the means to

break from traditional contractual processes to better leverage competitive opportunities, mitigate risk, and better manage its supplier base. Therefore, the vision for DoD acquisition programs will be towards the objective of managing suppliers and not supplies.

The Department of Defense spends a significant amount of its annual procurement budget in services. As compared with traditional service contracting methods, performance-based service acquisition offers a significant opportunity to shorten the acquisition lead-time, reduce costs, and increase customer satisfaction. The use of performance-based service acquisition by the Department continues to yield significant rewards.

Performance-based acquisition facilitates the Department's access to leading edge commercial technology and is an objective consistent with the goals of the Government Performance and Results Act. The Department reports its progress to Congress through the Office of Management and Budget.

## REDUCTION IN TOTAL OWNERSHIP COSTS

Total ownership cost of a weapon system encompasses development, production, operations, support, and disposal. In all ownership categories, costs are too high and can be reduced substantially if DoD better emulates the best practices of the public and private sectors. DoD's initial approach is to set and achieve total ownership cost reduction targets in a series of pilot programs. Targets will be extended to all programs and become increasingly more aggressive as lessons learned are applied across all systems.

DoD has established the following objectives for total ownership cost reduction:

- For systems in acquisition, surpass or achieve aggressive CAIV unit cost and total ownership cost targets that are 20-50 percent below historical norms.

- For fielded systems, reduce the logistics support cost per weapon system per year compared to FY 1997 baselines as follows: 7 percent by FY 2000, 10 percent by FY 2001, and a stretch target of 20 percent by FY 2005. The FY 1997 baseline total is $82.5 billion.

The Program Manager Oversight of Life Cycle Costs Section 912(c) study found that Program Managers' accountability for life cycle issues can be improved by

increasing visibility into related processes, giving them either direct control or, as a minimum, a strong influence over trade-offs among research and development, acquisition, and operating and support costs. They must be held directly accountable for resources they directly control. Where operational or economic considerations dictate sharing resources, individual Program Managers must be held accountable for clear and timely articulation of actions to reduce life cycle costs of their systems. Continuing partnerships involving the users, developers, and the support establishment will produce the best value for the available resources. Reducing the cost of fielded systems, while improving readiness, is an especially difficult, but very important, challenge.

## STATUTORY REPORT

Section 50001(b) of Federal Acquisition Streamlining Act of 1994 included an annual report requirement to Congress relating to achievement, on average, of 90 percent of cost, performance, and schedule goals for major and non-major programs. DoD was also directed to decrease, by 50 percent or more, the average period for converting emerging technology into operational capability.

As of September 30, 1999, all but seven Major Defense Acquisition Programs (MDAPs) are meeting more than 90 percent of the aggregated number of cost schedule and performance goals for that program. The seven exceptions are Advanced Threat Infrared Counter Measures/Common Missile Warning System, B-1B-Conventional Mission Upgrade Program, Joint Air-to-Surface Standoff Missile, Navy Area Theater Ballistic Missile Defense, Patriot Advanced Capability-3, Sense and Destroy Armor Munition, and Space-Based Infrared System. A timely review of these programs is being performed in accordance with Title 10, United States Code Section 2220(c) and appropriate determinations will be made based on those reviews.

As enacted by law on October 13, 1994, the average period for converting emerging technology into operational capability for major programs was calculated to be 115 months from program initiation dates to initial operating capability dates for all current major programs. As of September 30, 1999, this average period declined to 110 months. The calculation of the average period of all MDAPs described above includes a significant number of older programs that were structured and developed using the traditional acquisition process. A more accurate assessment of the effects of DoD's

acquisition reform efforts would be to concentrate on those programs initiated under the new acquisition reform process. MDAPs started since 1992 have an average period of 95 months for converting emerging technology into operational capability. This reduction is due to starting more modification and upgrade programs to fully employing regulatory reform, including specification streamlining, procurement reform, and integrated product teams to reduce cycle time.

## TEST AND EVALUATION

In June 1999, the Department took important steps to improve the acquisition process of new weapon systems for an earlier operational view by strengthening the role of the Director, Operational Test and Evaluation (DOT&E). The primary thrust is to empower involvement by DOT&E and the Operational Test Agencies to support development of operationally effective and suitable weapons earlier in the program life cycle through reorganization and leadership changes within Office of the Secretary of Defense. These changes will facilitate implementation of the test and evaluation themes the Secretary has encouraged: early involvement by the operational tester, leveraging developmental test and evaluation and training events for operational assessments, increased use of modeling and simulation to supplement testing, and participation by operational testers in Advanced Concept Technology Demonstration (ACTD) programs. In this way, the Department expects to improve progress towards realizing acquisition goals and *Joint Vision 2010*.

DOT&E and the Operational Test Agencies will be in a better position through their enhanced roles to become involved in acquisition programs from the earliest possible time to provide operational advice and assessments to program managers and contractors, as well as determine the adequacy of the test and evaluation infrastructure to support the associated test and evaluation programs. While resources to implement this approach are being reviewed for full initiation in FY 2000, the Department is also initiating actions to streamline the research, development, test, and evaluation infrastructure as reported to Congress in July 1999.

## WORKFORCE ISSUES

The number of people in the acquisition workforce and supporting the acquisition workforce in acquisition organizations continues to decline sharply. Qualitatively, DoD's needs will continue to change as well. In the future, DoD will need managers to manage suppliers,

not supplies, and engineers to design systems, not components. A smaller, differently skilled workforce will have to be well educated, fully trained, and continuously learning. A unified organizational structure for the Defense Acquisition University (DAU) was approved in September 1999 to replace the current consortium of Service and DoD schools. The unified structure will enable DAU to achieve economies and improve quality in training and educating the acquisition workforce. Under the new structure, DAU will aggressively pursue competitive sourcing of DAU functions on a best-value, risk-free basis. During 1999, the Department implemented a program of continuous learning to enable the acquisition workforce to remain current professionally and add new skills. The Department plans to invest nearly $36 million in this program in FY 2000, with further funding programmed for future years. This investment in a smaller workforce will help its members meet the challenges of the new millennium.

## Training the Acquisition Workforce

In an era of diminishing resources, the Department can no longer afford to continue training employees in traditional methods. Because of the need to get timely information to the acquisition workforce, other training methods and approaches must be utilized. Through the use of Web-based training, satellite training broadcasts, and other distance learning methodologies, the Department is able to deliver critical acquisition information to the acquisition workforce in a timely manner and at reasonable costs. During 1999, DAU developed its first eight Web-accessible courses, including the most popular, and plans another 12 courses in FY 2000. DAU plans to add other Web-based courses in future years, while continuing classroom training where appropriate. Over the past three years, the Department has conducted approximately 16 interactive satellite training broadcasts as a means to provide the acquisition workforce with timely, consistent, and relevant information. The broadcasts focus on regulatory changes, cultural changes, and new acquisition processes. The broadcasts include educational videos, panels of industry and government experts, and opportunities for frontline professionals to ask questions on the air. Through satellite training, the Department is able to simultaneously reach several thousand people with consistent and timely acquisition reform information so that employees can make the best decisions and take the most effective actions.

## INTEGRATING ENVIRONMENT, SAFETY, AND HEALTH INTO THE ACQUISITION PROCESS

More than 80 percent of DoD's hazardous waste is generated in the production, operations, and maintenance of weapons systems. By integrating environment, safety, and health (ESH) considerations into the acquisition reform process, DoD is helping reduce weapons system total ownership costs driven by hazardous wastes and other environmental requirements, while also improving performance. At the heart of the integration efforts are sound business practices such as the Institutionalization of Pollution Prevention to Achieve Compliance program, which is developing new tools and guidance to shift the focus from end-of-pipe controls to pollution prevention solutions to fulfill environmental legal requirements. Also, the Joint Logistics Commanders established the Joint Acquisition Sustainment Pollution Prevention Activity to work with depots and industry to eliminate hazardous materials in manufacturing weapon systems. These efforts will help in the implementation of long-term pollution prevention improvements.

DoD Regulation 5000.2 provides mandatory guidance for defense acquisition programs. It requires that every weapon system program integrate ESH considerations into its systems engineering and cost estimating processes.

## CONCLUSION

Acquisition and logistics reform represents a significant cultural change for the Department's acquisition, logistics, and technology workforce. Senior management is committed to ensuring that all the Department's business communities become fully knowledgeable about the flexibility of acquisition and logistics reform and the direct benefits of accelerating reform progress across the Department's acquisition and logistics processes. DoD's efforts have been encouraging and show promise, but the commitment and hard work to accelerate progress on outcome-driven performance measures must continue into the 21st century. Everyone must become partners in promoting reform across the Defense business enterprise. The real cultural revolution will occur when the Department successfully adopts performance-based, commercial business processes and practices to field the most technologically advanced, best-equipped, and most mission capable fighting forces in the world to come.

# Chapter 15

# INFRASTRUCTURE

Installations provide the foundation for all Department of Defense forces and are where DoD's forces live, work, and participate as members of local communities. To keep America's defense posture strong and enhance quality of life for military members and families, DoD's installations and facilities infrastructure must be technologically and functionally sound. The Department must sustain and continually reshape this foundation so military facilities can adapt to changing requirements supporting readiness and quality of life.

## INSTALLATIONS OVERVIEW

### Overarching Goals and Objectives

The Department has the world's largest infrastructure—with a physical plant valued at over $500 billion and a landmass that reaches 40,000 square miles. However, the Department is encumbered with obsolete and excess facilities. These facilities drain resources the Department could otherwise spend on modernization and readiness. As such, the Department is pursuing a three-pronged strategy—eliminate excess infrastructure, consolidate or restructure the operation of support activities, and demolish unneeded buildings. Base Realignment and Closure (BRAC) is an integral part of DoD's readiness and modernization plans to right-size and reshape installations to match changing military mission requirements. However, Congress has not authorized additional BRAC rounds. Nevertheless, the Department continues its efforts to streamline functions and infrastructure.

## INSTALLATIONS POLICY AND MANAGEMENT

### Policy Development and Management Through the Installations Policy Board

In an effort to foster consistent policy application and management data for installations across the Services and defense agencies, the Department established the Installations Policy Board. This integrating and coordinating board will minimize the resource commitments DoD must make, eliminating duplicative Integrated Process Teams and other policy and working groups. With the Installations Policy Board, the Department will nurture synergy among the various installation initiatives being worked by DoD.

### Facilities Requirements and Sustainment

#### FACILITIES SUSTAINMENT MODEL

The Department has embarked on an effort to create a Facilities Sustainment Model to normalize facilities

sustainment requirements across all DoD components and allow for analysis by facility type. A prototype model has been tested and is now in development for use in future programs and budgets. The model is highly dependent on accuracy of inventory records, so a concentrated effort is underway to improve those records to better support the model.

### INSTALLATIONS READINESS REPORTING

The FY 1999 Defense Authorization Act required the Secretary of Defense to establish a comprehensive annual readiness reporting system. The Act prescribed that the system measures the capability of units, training establishments, and defense installations and facilities to conduct wartime missions and support the forces. The initial report is due to Congress by April 1, 2000, and will include outputs from existing DoD facility condition assessment systems.

### JOINT USE/REGIONALIZATION

The Department is pursuing ways to maximize joint use of facilities and installations and encouraging DoD components to maximize use of current facilities before programming new construction. Installations in the same region are joining forces to procure services such as electrical supply, base maintenance and repair, communication services, and other base operating support services.

### ENHANCED USE LEASING

The Department's June 8, 1999, comprehensive report on enhanced use leasing provided an assessment of DoD's authority to outlease non-excess real and personal property. The report concluded that the authority to lease non-excess property, as authorized under United States Code Title 10, Section 2667, has served the Department well. However, this authorization has limitations that if removed would enable DoD to use its underutilized capacity more effectively and further reduce installation support costs.

### DEMOLITION AND FACILITY DISPOSAL

To save operation and maintenance dollars and improve safety through the removal of abandoned facilities, the Department must be aggressive in its facility disposal efforts. As part of the Defense Reform Initiatives (DRI), the Department's facilities strategic plan calls for the demolition and disposal of approximately 80 million square feet of obsolete and excess facilities by FY 2003.

The Department remains on track toward meeting this DRI goal.

### FORCE PROTECTION

Terrorist attacks demonstrated the vulnerability of DoD's facilities where military and civilian personnel work and live. Antiterrorism Force Protection considerations must now be considered in military construction planning and minimum prescriptive standards have been promulgated. The Department is also identifying criteria and priorities for modifying existing DoD facilities.

## Right-Sizing the Base Infrastructure

### THE CASE FOR ADDITIONAL BASE REALIGNMENT AND CLOSURE

Securing legislative authority for future BRAC rounds is absolutely critical to enhance national security. Divesting unnecessary base infrastructure permits DoD to use resultant savings to improve the fighting capabilities and quality of life for all service members. DoD's civilian and military leadership strongly supports legislation for additional BRAC rounds. However, the Department's repeated legislative proposals for BRAC rounds have not been supported by Congress. The need for additional BRAC rounds is firmly based on the following:

- The Department must eliminate excess base infrastructure and make the remaining more efficient.

- The BRAC process will generate significant savings and cost avoidance. The General Accounting Office (GAO) and the Congressional Budget Office (CBO) share this view. DoD estimates net cumulative savings of approximately $14.5 billion by 2001 and annual recurring savings of approximately $5.7 billion. The CBO believes these estimates are reasonable.

- BRAC allows the Department to reshape base infrastructure to match changing mission and other requirements and is an essential part of an overall reshaping strategy.

- The Department is committed to helping BRAC impacted communities succeed with economic redevelopment efforts.

### ALTERNATIVES TO BASE REALIGNMENT AND CLOSURE

The Department continues to pursue initiatives to make installations more cost effective and to reshape base

infrastructure to changing mission requirements. The benefits of these alternatives cannot approach the benefits gained through a BRAC process. However, the value of the alternatives is substantial. Alternatives include, but are not limited to, the following:

- Demolition of excess buildings to avoid paying for a capability that is no longer cost effective.

- Leasing of underutilized real property to generate added value, either cash or by receiving in-kind consideration, to offset infrastructure funding shortfalls.

- Development of detailed options for increased use of competitive sourcing and privatization.

### ASSISTING COMMUNITIES AFFECTED BY BASE REALIGNMENT AND CLOSURE

For a BRAC community to succeed, the Department must provide easy and quick access to real estate facilities on closed bases to expedite the creation of new jobs and revenues to support planned redevelopment.

### IMPROVEMENTS TO THE BASE REUSE PROCESS

On October 5, 1999, the President signed legislation that provides for no cost transfers of Economic Development Conveyance (EDC) property in order to eliminate delays resulting from prolonged negotiations over fair-market value. The new authority also allows the Department to modify existing EDC agreements, where appropriate. In addition, interim and model leases are in place to serve as boilerplates for the standard federal lease requirements. Under the new authority, DoD redirects the focus of property conveyances from a cumbersome real estate deal to a rapid and smooth transition of job-creating and income-producing assets. The Department is also working to ensure better consistency across the Services when implementing new and modifying existing EDC agreements.

The Department is committed to helping communities by aggressively working to complete environmental restoration activities at most current BRAC sites by 2007. DoD conducted restoration activities at 4,800 sites, at over 200 BRAC installations. Additionally, the Department invested $5.0 billion to accomplish this goal and projects that it will invest additional $1.9 billion after FY 2001 to complete work at all BRAC sites. The redevelopment of closed bases has created approximately 50,000 new jobs and more than 1,200 tenants.

Several early transfers of surplus base property have been completed using Section 334 of the Comprehensive Environmental Response, Compensation, and Liability Act. This law gives DoD the authority to encourage early transfer of property at closing military installations by providing local government and developers an incentive to purchase environmental insurance, and partnering with public and private stakeholders in the cleanup and property transfer process. In addition, DoD is working with the private sector to improve the environmental remediation and contracting process.

### Military Housing Requirements, Construction, and Housing Privatization

#### STANDARDIZING AND VALIDATING THE REQUIREMENTS

Central to the Department's military housing program is the process for determining how much on-base housing is needed. Audit reports by the GAO, CBO, and the DoD Inspector General (IG) criticized the Department's use of three different processes for determining housing requirements and understating the availability of private sector housing, thereby inflating the required number of housing units in the DoD inventory. To address these concerns, the Department is working to develop a single model for determining on-base housing needs using a set of standard DoD-wide factors along with flexible variables that accommodate Service differences. This model is important in determining the number of housing units that need to be constructed or maintained on-base and for determining the size of housing privatization projects.

#### MILITARY FAMILY HOUSING PRIVATIZATION

Approximately two-thirds of DoD's 282,000 government-owned houses are in need of extensive renovation or replacement. Fixing this problem using only traditional military construction will take 30 years and $16 billion. The Department's Military Housing Privatization Initiative (MHPI), signed into law in 1996, began a five-year test of authorities provided by Congress to help solve the housing problem. MHPI enables the Department to decrease its up-front construction expenses and eliminate the operations, maintenance, and management costs that are incurred over the life of traditional housing construction projects through private sector leverage. DoD has a goal to privatize 30,000 housing units by FY 2000.

DoD is evaluating proposals for a 114 housing unit project at Marine Corps Logistics Base, Albany, Georgia,

and has awarded a 2,663 housing unit project at Fort Carson, Colorado. The Department issued Request for Proposals for 670 units at Robins Air Force Base (AFB), Georgia; 712 units at Marine Corps Base Camp Pendleton, California; 150 units at Kingsville, Texas; 300 units at Everett, Washington; 828 units at Elmendorf AFB, Alaska; 812 units at South Texas; 763 units at New Orleans, Louisiana; and 3,248 units at San Diego, California. DoD's most recent project is a Request for Qualification for 6,631 units at Fort Hood, Texas; 5,482 existing units and construction of 1,149 units. DoD issued at least ten project solicitations in 1999.

### HOUSING ALLOWANCES AND MILITARY CONSTRUCTION/PRIVATIZATION STRATEGIES

The Department provides housing for military members and their families either by paying allowances for members to live in private-sector housing or by assigning families to government-owned or leased housing. The GAO reported, "DoD's policy of relying primarily on private-sector housing to meet military family housing needs is cost effective." Studies by both the CBO and the DoD IG showed that, compared to the cost of providing military housing, the government's cost is significantly less when military members and families are paid housing allowances and live in private housing. With two-thirds of DoD's married members receiving monetary compensation instead of government housing, integrating the housing allowance system within the overall housing strategy is critical. With this in mind, the Deputy Under Secretary of Defense for Installations created the DoD Housing Policy Panel to support this strategy concept. The Panel, under the leadership of the Installations Policy Board, is charged with developing the integrated strategy for using housing allowances, construction, and privatization to improve housing conditions for the Department's military members.

### DEVELOPING THE RIGHT MIX OF MILITARY CONSTRUCTION AND PRIVATIZATION

Three years ago, the Department set a goal to eliminate inadequate military housing, worldwide, by 2010. A key element in achieving this goal was embodied in the effort to develop installation-level family housing master plans. These plans would detail, base-by-base, the housing inventory, the number of Service-defined inadequate housing units requiring renovation, and the means for improving the units. Additionally, these plans provided the estimated cost to revitalize, replace, privatize, or demolish the inadequate inventory. This was the Department's first attempt at determining a mix

of construction and privatization to meet the 2010 housing goal.

The value of the family housing master plans was not lost on Congress. The House Appropriations Committee directed the Services to submit Family Housing Master Plans in July 2000. The Services are already working with the Office of the Secretary of Defense staff to refine existing plans by integrating the requirements identified in the House report and additional allowance information.

### Utility Privatization and Energy Management

With over $2.3 billion spent annually by DoD on energy for buildings and facilities, the DRI Report identified the need to rethink the approach to managing the Department's resources, directing that DoD should manage energy, not power infrastructure. The Department is privatizing its utility infrastructure, where practicable, by September 30, 2003. This action will use the capital and expertise of the private sector to maintain and upgrade the electric, water, wastewater, and natural gas systems that support DoD installations. The military departments identified over 2,400 individual utility systems as candidates for privatization.

The Department has embarked on an aggressive program to integrate fully its energy and utilities management programs (infrastructure, commodity purchase, and conservation efforts). To do so, the Department will explore ways to exploit the potential synergy between utility privatization, competitive procurement of energy commodities (electricity and natural gas), and implementation of energy and water conservation measures. DoD will also take advantage of the changing electricity market as the states restructure.

In 1997, DoD stood up the Defense Energy Support Center (DESC), which is involved in all facets of the Department's energy program, with primary emphasis on energy procurement and conservation efforts. DESC serves as the implementing agency for the DoD Direct Supply Natural Gas program. The objective of this program is to obtain the most cost-effective supply of natural gas as a replacement for petroleum fuels or local utility high cost natural gas service for DoD installations while maintaining full energy service reliability. DESC and the military departments are actively working rate intervention issues, consolidating electrical loads between installations and regions to take advantage of better rates. DESC also actively tracks and reports on the progress states are making in restructuring the electricity market.

DoD continues to make great progress in reducing its energy consumption and meeting the President's FY 2010 goal, directed by Executive Order 13123, of 35 percent reduction compared to FY 1985 consumption. To continue this trend, the Department and the Services budgeted $93 million in FY 1999 for energy conservation projects ($47 million of Energy Conservation Investment Program and $46 million from the Services' Operation and Maintenance accounts).

DoD's strategy for conserving energy and water resources in existing structures focuses on using private sector capital to finance energy-saving investments through shared savings contracts and area-wide agreements. The Department has multi-regional Energy Savings Performance Contracts (ESPCs), which cover all 50 states and the District of Columbia, with a combined private sector investment capacity of more then $3.2 billion. Additionally, DESC awarded a comprehensive ESPC for the Military District of Washington. This contract uses $70 million in private-sector investments to install energy savings measures in over 800 buildings on five bases and will save 600 million British Thermal Units of energy, and 50 million gallons of water per year. Carbon emissions will be reduced by 86,000 tons per year. The Services continue to actively pursue demand-sided management agreements with the public utilities.

The Department's strategy for reducing energy and water consumption in new buildings calls on the Services to take advantage of new design techniques and energy efficient materials. The Department intends to use the principles of sustainable design in future construction, where it has been determined to produce the lowest life-cycle costs. Sustainable design methods use the most energy efficient and environmentally sustainable products, optimize architectural design to incorporate local natural conditions, such as day-lighting and passive/active solar and solar-thermal applications, and provide for indoor workplace environmental quality. Demonstration projects undertaken by the military departments show this approach to design produces 30 to 50 percent in energy savings with minimal investment.

## Competitive and Strategic Sourcing

### OVERARCHING DEFENSE REFORM INITIATIVE GOALS AND OBJECTIVES

One of the four initiatives underlying the Department's overarching reform efforts is to compete its commercial activities and apply market mechanisms to improve quality, reduce costs, and respond to customer needs. Experience demonstrates that competition yielded both significant savings and increased readiness for each of the military departments. Thus, competitive sourcing is a major pillar of the business strategy for defense enunciated in the DRI Report. There is $11.7 billion in funding for readiness and modernization of defense programs that depends upon successfully implementing Department's current competition plans. By FY 2005, the Department plans to study 245,500 positions to achieve these savings.

### COMMERCIAL ACTIVITIES AND INHERENTLY GOVERNMENTAL INVENTORY

In January 1999, the Department completed a comprehensive inventory and review to appropriately identify candidates for competition. The inventory and review of all civilian and military positions determined which positions within the Department are:

- Inherently governmental.

- Commercial activities exempt from competition.

- Commercial activities available for competition under the Office of Management and Budget (OMB) Circular A-76.

About 2,950,000 positions were identified. After removal of military personnel, civilian personnel statutorily exempt from competitive sourcing, and inherently governmental functions, about 308,000 positions were identified as potential candidates for competitive sourcing.

### COMPETITIVE SOURCING AND STRATEGIC SOURCING STRATEGIES

As a result of the traditional A-76 competitive sourcing program, the Department saves about 35 percent on service costs and will reduce manpower involved in commercial activities by about 24 percent. Although the program works well, a broader approach to the traditional A-76 competitive sourcing program could lead to greater savings and efficiencies and more opportunities for competition. This broader approach, called Strategic Sourcing, complements the A-76 program and is consistent with the reinvention goals expressed in the DRI and the competitive sourcing process described in OMB Circular A-76.

Strategic sourcing is not avoidance of A-76. Rather, this approach is more logical and allows the Department to move beyond theoretical debates about what is inherently governmental because it shifts focus back to actual

program implementation. Strategic sourcing allows the Department to make wiser business decisions with an enterprise-wide versus compartmentalized approach. This approach looks across the entire organizational spectrum at all functions, including those that are exempt from the traditional A-76 process, as well as commercial activities, to determine if the function should be retained, eliminated, or revised. This is a more logical approach because most organizations have an embedded mixture of functions that are both inherently governmental and commercial in nature.

### UPDATING DOD DIRECTIVES AND INSTRUCTIONS

The Department undertook a thorough review of its Commercial Activities Program to update and clarify its existing policies and procedures and to establish a comprehensive policy on strategic sourcing. Interim guidance on competitive sourcing and strategic sourcing will address the establishment of performance measures, cost comparisons between public and private sector bids, administrative appeals process, and waivers for cost comparisons. The directive and instruction on the Commercial Activities Program and the Strategic Sourcing Program are scheduled for publication in May 2000.

## REDUCING TOXIC CHEMICAL RELEASES

Between 1994 and 1997, the Department eliminated 56 percent of toxic chemical releases, three years ahead of the President's goal for a 50 percent reduction by 1999. To meet this goal and cut environmental compliance costs, DoD increased emphasis on pollution prevention by focusing on smart business decisions, achieving life-cycle reduction, and seeking pollution prevention solutions for compliance requirements. DoD funds invested in pollution prevention produced a 54 percent return on investment over a five-year period. The benefits of pollution prevention spending are reflected in reduced pollution and fewer enforcement actions against DoD.

### Ensuring Continued Access to Test and Training Lands

Over two-thirds of the lands used by the military in the United States are identified as withdrawn public lands—lands that would otherwise be administered by the Department of Interior for multiple-use purposes. These withdrawn public lands, located in Arizona, Nevada, New Mexico, and Alaska, represent some of the premier test and training facilities used by the Services. The FY 2000 National Defense Authorization Act renews over 7.2 million acres of public lands for military use. The authority to use these lands for military purposes was set to expire in FY 2001.

### Environmental Cleanup

The goals of the Department's environmental cleanup program are to minimize the risk to people and the environment, restore contaminated sites to productive use, and build trust with DoD stakeholders. The Department ranks cleanup sites according to relative risk factors to ensure adequate funds are available to clean sites that pose the greatest risk. Of the sites planned for cleanup over the next six years, 45 percent are in the highest relative risk category and will receive 62 percent of available funding. DoD measures success in contaminated site restoration by identifying the number of sites having a cleanup remedy in place or a completed cleanup response. DoD has completed cleanup efforts, with the exception of long-term remedial operations and monitoring, at more than half of the Department's installations. Finally, the Department is continually building partnerships with stakeholders, while seeking innovative ways to do business. In FY 1998, DoD entered into a voluntary cleanup agreement with the Commonwealth of Pennsylvania—the first of its kind—which will allow all parties to achieve timely, cost-effective cleanups at facilities not included on the National Priorities List by harmonizing innovative provisions of state law with federal requirements.

## CONCLUSION

The Department is diligently striving to reshape its installations to match the needs of its military forces in the 21st century. The Department will continue to focus on a multi-part strategy which not only involves eliminating excess infrastructure, but includes privatization of housing and utilities, competitive and strategic sourcing, enhanced outleasing of underutilized real property and facilities, streamlined energy management, improved standards and conditions for critical facilities, and responsible environmental stewardship.

# Chapter 16

# INDUSTRIAL CAPABILITIES AND INTERNATIONAL PROGRAMS

As the defense industrial environment continues to change, DoD is forecasting fewer new major systems and longer intervals between systems. Major firms are becoming more concentrated and vertically integrated as companies complete acquisitions and adjust their strategic posture. Subtier consolidation is accelerating while acquisition reform reduces DoD control and visibility into subsystem source selections and subtier firms.

These trends challenge DoD's ability to maintain industrial competition to facilitate cost and quality improvements and innovation. To address this challenge, DoD's industrial strategy has four broad thrusts:

- Increase the opportunities available to DoD suppliers by expanding their access to global markets and encouraging diversification into commercial markets.

- Increase the number of suppliers serving DoD by facilitating DoD's access to global suppliers and by breaking down barriers between the commercial and defense industries to realize the benefits of civil-military integration.

- Invest in future industrial capabilities.

- Address industrial issues in the acquisition process to assure required capabilities remain available or can be reconstituted when needed.

Concurrent with DoD's efforts to maintain competition, the Department is pursuing the critical goal of improving systems interoperability with allies and potential coalition partners. There are differences in international partners' national political and economic priorities that support coalition interoperability. Thus, the Department's objective is to capitalize on cooperative initiatives in joint and combined interoperability that incorporate solutions of materiel, doctrine, tactics, techniques, and procedures. The Department is focused not just on command, control, communications, intelligence, surveillance, and reconnaissance systems but also the goal of building a system of systems capability in support of joint and coalition operations.

## A CHANGING COMPETITIVE ENVIRONMENT

### Right-Sizing in a Changing Environment

Executing the National Military Strategy requires a supplier base capable of providing required defense goods

and services in a timely and cost-efficient manner. In pursuit of such an industrial base, the Department supports the process of supplier rationalization enabling firms to eliminate excess capacity, reduce costs, sustain critical mass in research and development, and provide better value for DoD and the U.S. taxpayer. On the other hand, the Department does not support those transactions that adversely impact effective competition and innovation for DoD programs and requirements. The restructuring of the defense industry to date is a success, maintaining competition and innovation while receiving significant cost benefits from a more efficient, right-sized industrial structure.

However, as both the cost of technology and the degree of military cooperation with key U.S. allies continue to increase, DoD must ensure its supplier base continues to match the realities of the 21st century national security environment. DoD increasingly obtains its goods and services from a mixture of commercial and defense firms with international ownership and facilities. At the same time, the National Military Strategy increasingly relies on the employment of coalitions of like-minded allies to achieve its objectives, as well as the pursuit of information dominance in any future conflict. The latter goal is driving DoD to incorporate more advanced information technology into its systems and the suppliers of these systems typically rely on global sources of labor, technology and capital. The Department is addressing these trends by examining ways to foster more linkages between U.S. defense suppliers and those of its allies to ensure that DoD adapts to the changing environment and captures the benefits offered by globalization. For example, closer integration of allied supplier bases facilitates more interoperable coalition forces, access to the most advanced commercial technologies, and a more efficient industrial structure. At the same time, it inhibits the formation of rival fortresses in the United States and Europe that may threaten the cohesion of the NATO alliance and yield economic inefficiencies. Key elements of a more integrated industrial base include reciprocity and congruence of market access, export controls, law enforcement and intelligence cooperation, and business practices.

### Merger and Acquisition Reviews

The Department conducts a careful and comprehensive assessment of mergers and acquisitions involving its suppliers to determine the transaction's effects on DoD programs, particularly regarding competition, innovation, and cost. DoD cooperates closely with the relevant antitrust agency—either the Department of Justice (DoJ) or Federal Trade Commission (FTC)—in the overall U.S. government antitrust review. This DoD process is an integral element of the Department's broader efforts to oversee the health and suitability of its supplier base.

Departmental reviews focus on four principal questions: Will the transaction result in a loss of necessary competition and innovation? Will the transaction have an adverse effect on programs due to pre-existing buyer/seller relationships between the two firms? Does the transaction present organizational conflicts of interest? What cost savings might accrue to the Department as a result of the acquisition? These issues are at the heart of the review process DoD institutionalized in the mid-1990s.

The process is quite successful. Since March 1994, the Department has reviewed over 120 transactions, 12 of which required consent agreements, and only a few of which were withdrawn due to DoD and DoJ/FTC expressions of concern. In 1999, the Department reviewed more than 30 transactions and opposed two—separate General Dynamics and Litton proposals to acquire Newport News Shipbuilding.

### Improved DoD Visibility
### Into Industrial Capabilities

The Department is employing a variety of strategies to promote competition at both prime and subtier levels. DoD is maintaining government flexibility in the selection of critical suppliers, competing subsystems separately from platforms, supplying critical subsystems as government furnished equipment, and breaking anti-competitive exclusive teaming arrangements.

Additionally, the Department is evaluating and addressing changes in key component and material providers that supply many programs and affect competition, innovation, and product availability. Selected DoD assessments also consider the extent to which vertical integration (or the use of preferred suppliers) within a consolidated defense industry might adversely affect competition and innovation. Finally, the Department is continuing to review foreign product restrictions contained in the Defense Federal Acquisition Regulation Supplement that were imposed by a DoD policy decision, not by statute, to determine if they should be continued for national security reasons.

DoD completed industrial capabilities assessments of fixed wing aircraft, electronic systems integration for combat systems, advanced suspension systems for tracked combat vehicles, deformable mirrors, strategic and space solid rocket motors, military fuzes, integrated automatic flight control systems, and polyacrylonitrile carbon fibers.

## Small Business Efforts

Small businesses are an important source of the industrial capabilities supporting defense needs and an important element of the economic fabric of the United States; they bring critical innovation to both the defense and commercial marketplaces. Additionally, small businesses are widely recognized as the economic engine creating jobs and ensuring that a greater number of the nation's citizens receive benefits from defense procurement spending.

In FY 1999, DoD awarded contracts totaling $116.6 billion; 21.5 percent, or $25.0 billion, was awarded to U.S. small business concerns. In addition, DoD awards to small disadvantaged business (SDB) concerns also were significant; prime contract awards equaled $7.0 billion (6.0 percent of total awards). Finally, in FY 1999, DoD awarded prime contracts totaling $2.3 billion to women-owned small business firms, 1.9 percent of total DoD prime contract awards.

## Mentor-Protege Program

The Mentor-Protege Program is valuable to the Department's success in meeting its SDB prime and subcontracting goals. Over 200 large business mentors have provided over 300 protege firms with business and technical assistance targeted toward enabling these firms to compete more effectively in the complex DoD marketplace. For their efforts, the mentors receive either reimbursement or credit toward their SDB subcontracting goals. Proteges may be SDB firms or qualified organizations employing the severely disabled. As a direct result of the assistance program, protege firms received new technology, improved quality assurance systems, and business infrastructure support.

The Department receives value as mentors reevaluate their make or buy decisions and identify requirements that can be outsourced to proteges. In one example, a mentor transferred the technology used to produce warm/hot formed titanium aircraft parts to an SDB for use in the Cobra, Huey, Kiowa Warrior, and V-22

Osprey helicopter programs. The resulting efficiencies attributable to outsourcing this effort to a small business concern reduced ship-set costs to the Cobra program, alone, from $21,700 to $6,500.

Similarly, mentors used the program successfully to develop vertically integrated suppliers. As a result of participating in the program, a protege manufacturing electronic assemblies for a major aerospace contractor developed capabilities in testing and troubleshooting electronic assemblies for aircraft and flight test equipment, and achieved ISO 9002 certification. Both the Department and mentor benefited from lower costs and improved production efficiency.

In other instances, proteges broadened their customer base, achieved cost efficiencies, and increased their economic stability. For example, the Choctaw Nation established a custom commercial trailer business and manufactures oil field equipment using mentor technology originally associated with the development of missile subassemblies and containers. The Choctaw Nation uses the profits for health and medical services, job training, and scholarships.

## SMALL BUSINESS INNOVATION RESEARCH PROGRAM

Under the Small Business Innovation Research (SBIR) program, DoD funds approximately $550 million annually in defense-related research and development projects at small technology companies. The SBIR program is designed to harness the innovative talents of small technology companies to benefit the U.S. armed forces and U.S. industry. The National Academy of Sciences, National Bureau of Economic Research at Harvard, and General Accounting Office have consistently reviewed the program favorably for its contribution to the U.S. military and economic capabilities.

The accelerometer used in most DoD missile systems (including the Patriot Advanced Capability-3 (PAC-3), Hellfire 2, AIM-9X, and Javelin) is a recent example of a highly successful SBIR-developed technology. The accelerometer, developed by Silicon Designs Inc. of Issaquah, Washington, is a sensor that tells the missile to arm itself when it reaches a specified acceleration. This technology replaced a mechanical switch that was significantly less reliable and five times the price. Silicon Designs' accelerometer is used also in all new Ford and Chrysler automobiles produced in the United States. In automobiles, the accelerometer triggers the inflation of the airbags when the car decelerates abruptly during an accident. As in the missile systems, this

technology replaced a mechanical switch that was significantly less reliable, several times as expensive, and unlike the accelerometer, could not be tailored to respond differently to different types of impacts. Accelerometer sales to DoD and commercial customers total $40 million per year. DoD's initial SBIR investment was just $1.2 million.

## WOMEN-OWNED SMALL BUSINESS PROGRAM

The Department's Women-Owned Small Business (WOSB) Program has three objectives:

- To facilitate, preserve, and strengthen full participation for WOSB firms in the DoD acquisition process.

- To promote efforts to achieve the government-wide 5 percent goal for prime and subcontract awards to WOSB concerns.

- To support the growth of WOSB firms through outreach and technical assistance.

The Department initiated a nation-wide focused outreach program targeting WOSB concerns in four industry areas: construction, health care, manufacturing, and research and development. DoD held the first WOSB conference for the manufacturing industry in June 1999, in Tampa, Florida. Large DoD prime contractors joined with DoD buying activities in the southeastern region of the United States to publicize DoD prime contracting and subcontracting opportunities. Similar events are planned for FY 2000 in other regions of the country. In addition, the Department maintains a WOSB Web site (http://www.acq.osd.mil/sadbu/wosb) that highlights Program Best Practices, Initiatives, and Success Stories. The Department advocates active solicitation of WOSB firms for all competitive acquisitions.

## COMPREHENSIVE SMALL BUSINESS SUBCONTRACTING PLAN TEST PROGRAM

The DoD Comprehensive Small Business Subcontracting Plan Test Program authorizes the negotiation, administration, and reporting of subcontracting plans on a plant, division, or company-wide basis. The purpose of the test is to determine whether comprehensive subcontracting plans will result in increased subcontracting opportunities for small and small disadvantaged businesses, while reducing the administrative burdens on contractors. The test period extends through September 30, 2005.

Eligible contractors include large businesses that during the preceding fiscal year performed under at least three DoD contracts valued in the aggregate at $5 million or more. Participants must have achieved an SDB subcontracting rate of 5 percent or more, or submit a detailed plan with milestones leading to a 5 percent SDB subcontracting rate. There are 23 companies participating in the test.

## INTERNATIONAL PROGRAMS SUPPORT DOD'S TRANSFORMATION

Across the full range of military operations, U.S. forces often fight or work alongside the military forces of other nations. Deploying forces in cooperation with those of other countries places a premium on interoperability—ensuring U.S. systems are compatible with allied systems.

### DoD's International Armaments Cooperation Policy

International armaments cooperation, in its many forms, enhances interoperability, stretches declining defense budgets, and preserves defense industrial capabilities. It is a key element of DoD's acquisition and technology efforts to field the most capable force possible. Prior experience shows that successful efforts require that DoD engage with potential partners in discussions at the earliest practicable stage to identify common mission problems, and to arrive jointly at acceptable mission performance requirements to balance cost, meet coalition military capability needs, and assure interoperability.

Many weapons programs will remain national. On the other hand, cooperation with allies must be the choice for those systems that require interoperability in coalition operations—for example, in areas such as air defense, communications, intelligence, chemical/biological defense, and information security. Where opportunities for cooperation do exist, these programs must be implemented efficiently and effectively. Interoperability includes political and cultural aspects in relationships, as well as military activity.

The success of future multinational coalition operations depends on how well the Department prepares now for future interoperability on multiple levels. The recent lessons learned in Kosovo further illustrate the difficulty of conducting responsive and effective coalition warfare and the need for enhancing interoperability.

166

Coalitions are the preferred way for U.S. forces to confront major regional or global security issues—sharing the burden of resources and political legitimacy. However, inherent in coalition warfare is the critical requirement to significantly improve interoperability—further exploiting the Revolution in Military Affairs. Using no new resources, the Department has formed an Interoperability Directorate to leverage activities of the entire Department to improve coalition interoperability by providing focus and strategic vision to enable the full range of military operations, through interoperability and coalition initiatives.

The Department is engaged in forums that are designed to achieve Multinational Force Compatibility with its allies and likely coalition partners. NATO's Defense Capabilities Initiative is designed to improve defense capabilities and interoperability among NATO military forces, and partner forces where appropriate, bolstering the effectiveness of multinational operations across the full spectrum of Alliance missions. Combined with other military-to-military engagement activities, these programs go beyond seeking the physical interoperability of systems. They pursue, as well, interoperability in the areas of tactics, techniques, and procedures. By promoting common thinking, the Department increases the potential for developing common requirements.

Cooperative international defense programs should apply the lessons learned from successful international commercial alliances to enhance successful implementation. DoD is adapting commercial practices and establishing a new international armaments cooperation model, one in which governments establish the military requirements and business rules, but the industries involved establish the best international teams of their own choosing to competitively bid on the work. The objective is a more balanced partnership, one that guarantees each individual member's independence while recognizing cooperative partners' interdependence, and takes full advantage of the efficiencies and effectiveness of competitive market forces.

Some of the more notable success stories in international industrial cooperation include the F-16 Falcon and the F-16 Mid-Life Upgrade, AV-8 Harrier, T-45 training aircraft, CFM-56 engine, the continuing cooperative efforts under the NATO Airborne Warning and Control System program, and the Multifunctional Information Distribution System. The Department is working with allies in Europe and Asia to explore other cooperative efforts, including the Medium Extended Air Defense System, TRACER, Joint Strike Fighter, Theater Ballistic Missile Defense, and NATO Allied Ground Surveillance efforts.

The International Cooperative Research and Development program led to sharing military technology among allies, as well as to development of joint equipment to improve coalition interoperability. Frequently, these research and development investments provide the cooperative linkage required to leverage independent national developments and enhance military capabilities. Such items include advanced aircraft, combat vehicle command and control, communications systems interoperability, and ship defense. These cooperative programs also foster closer international and military-to-military relations. It is important to recognize that these efforts also enhance the joint capability of U.S. forces, as well as the capability to conduct coalition operations.

The Foreign Comparative Testing program also enhances international defense cooperation. This program, which evaluates foreign non-developmental items for DoD use, has included 20 foreign countries as active participants. The Services and the United States Special Operations Command have procured over $4.5 billion worth of foreign equipment as a direct result of successful equipment evaluations. By purchasing foreign non-developmental items, DoD saved over $2 billion in research, development, test, and evaluation costs while providing earlier fielding of quality items to U.S. warfighters.

As DoD takes greater advantage of the opportunities in international defense cooperation and commerce, it continues to address the risks of the proliferation of weapons of mass destruction and advanced tactical systems. DoD has worked to ensure that the Services and agencies understand the nature and importance of the February 1995 Conventional Arms Transfer policy and take its tenets fully into account when pursuing cooperative international defense programs and sales. As a result, both economic security and national security interests are pursued and protected.

The Department also took steps to improve the effectiveness and efficiency of international cooperation. DoD has developed an International Armaments Cooperation Handbook to provide a compendium of current

policy, key processes, and points of contact for use by persons working cooperation issues in the Department.

## International Cooperative Opportunity Group Developments

The Department is examining the potential for international collaboration on upcoming major systems acquisitions. As part of the Department's review of potential opportunities for cooperation on upcoming major system acquisitions, the Armaments Cooperation Steering Committee (ACSC), the senior armaments cooperation policy and oversight body within the Department of Defense, is implementing a disciplined process for identifying new opportunities for international cooperation. A major ACSC initiative deals with the formation of International Cooperative Opportunities Groups (ICOGs) to identify and recommend specific new opportunities for armaments cooperation.

ICOGs are looking at areas of common need and seek to establish early communication with allies to create opportunities earlier in the acquisition process. The ICOG process identified programs as candidates for potential cooperation based on several factors: the degree of requirements commonality; the extent to which the technologies, strategies, and budgets of the potential partners are complementary; the potential for international industrial teaming; and the perceived benefits and risks associated with execution of such a program. Key topics at the recent Cooperation Day III annual meeting included mechanisms to:

- Better organize national/collective efforts to identify interoperability requirements.

- Ensure appropriate national/collective investments in building and testing interoperable systems.

## Environmental Cooperation

### ENVIRONMENT AND NATIONAL SECURITY

The U.S. military developed a comprehensive and robust environmental program over the past 27 years that addresses all aspects of environment, safety, occupational health, pest management, fire and emergency services, and explosives safety. Further, the Department's experience and knowledge in defense-related environmental issues can provide a useful engagement tool for combatant commanders in developing theater engagement plans.

### MILITARY-TO-MILITARY ENVIRONMENTAL COOPERATION

Military-to-military environmental activities support U.S. foreign and defense policy objectives by shaping the international environment through cooperative engagement. Through bilateral and multilateral associations, DoD can help interested militaries obtain the necessary tools to understand, prioritize, and meet military environmental security needs. DoD environmental engagement reinforces efforts by militaries in newly democratic societies to adjust to such concepts as civilian oversight, public accountability, openness, and cooperation with civilian agencies. These activities, which support Secretary of Defense commitments and State Department regional strategies, are consistent with defense requirements identified in the National Security Strategy and Commander in Chief Theater Engagement Plans.

DoD conducts bilateral/multilateral environmental cooperation with Argentina, Australia, Canada, Czech Republic, Estonia, Finland, Germany, Georgia, Israel Italy, Latvia, Lithuania, Jordan, Kazakhstan, Mongolia, Norway, Russia, Slovenia, Sweden, South Africa, South Korea, Thailand, Turkmenistan, United Arab Emirates, and United Kingdom. DoD is discussing cooperation with China, Chile, and El Salvador. In addition to promoting stability through engagement, DoD gains useful information from these exchanges in support of the Department's environmental responsibilities as it takes advantage of the perspectives that other nations offer.

### ARCTIC MILITARY ENVIRONMENTAL COOPERATION

DoD also engages in agreements such as the Arctic Military Environmental Cooperation (AMEC) Program, a trilateral forum for dialogue and joint activities among United States, Russian, and Norwegian military officials to address critical environmental concerns in the Arctic. One of the main objectives of AMEC is to develop technologies for the Russian military to address its radioactive and nonradioactive waste challenges in the fragile Arctic ecosystem. DoD, together with the Department of Energy and the Environmental Protection Agency, will leverage U.S. expertise in environmental techniques to address radioactive and chemical

waste associated with nuclear submarines. More importantly, this unique effort is helping to build trust and understanding among three militaries.

## CONCLUSION

The Department of Defense must ensure that it can access, utilize, and maintain the best industrial resources available—defense and commercial, domestic and international—to obtain the lowest cost, highest performing products. Accordingly, the Department is reviewing merger and acquisition transactions to determine the effects on DoD programs and advising the appropriate antitrust agency; identifying and addressing industrial capabilities and competition concerns; and encouraging international industrial, armament, and environmental cooperation. DoD is doing this in a manner consistent with sound business practices and the overall political, economic, and national security goals of the United States.

BLANK   PAGES

# Chapter 17

# THE FY 2001 DEFENSE BUDGET AND FUTURE YEARS DEFENSE PROGRAM

President Clinton's FY 2001 defense budget continues implementation of the Department of Defense's FY 2000-2005 Future Years Defense Program (FYDP), which is the DoD plan for ensuring America's security and vital global leadership. Both the FYDP and new budget reflect the recommendations of the Department's May 1997 Quadrennial Defense Review (QDR) —as well as subsequent assessments of strategy, force structure, readiness, modernization, infrastructure, and other determinants of the U.S. defense posture.

In funding the FYDP last year, the President made available to DoD $112 billion in additional resources. This enabled robust support for those requirements assessed to be the most essential to preserving the high quality and readiness of America's armed forces. The FY 2001 budget protects the President's $112 billion commitment and continues strong funding for key military requirements. Both the new budget and FYDP seek a prudent balance between immediate military needs, most notably force readiness and quality of life, and long-term safeguards, most notably the development and procurement of new weapons and technologies. This balanced approach was a critical recommendation of the QDR.

## THE DEFENSE TOPLINE

The President's FY 2001 budget proposes $291.1 billion in budget authority and $277.5 billion in outlays for the Department of Defense. See Appendix B for other defense budget data. For FY 1999, DoD budget authority was, in real terms, about 40 percent below its level in FY 1985, the peak year for inflation-adjusted defense budget authority since the Korean War. As a share of America's gross domestic product, FY 1999 DoD outlays were about 3 percent, well below average levels during the past five decades.

## PRIORITIES IN THE FYDP AND FY 2001 BUDGET

### Readiness, People, and Quality of Life

The FY 2001 budget will keep U.S. forces ready to act decisively through strong funding for training, supplies, maintenance of weapons and equipment, and other preparedness essentials. These requirements are mostly paid for in the Operation and Maintenance (O&M) accounts of the four Services. Readiness also requires taking good care of all members of the armed forces and

their families. To that end, the FY 2001 budget sufficiently funds quality of life components like pay, housing, and health care.

To address mounting warnings about retention and recruiting, last year the President proposed substantial improvements in military compensation. Congress supported these improvements, increasing certain elements of them. Building on this, the FY 2001 budget increases military base pay 3.7 percent—.5 percent more than projected civilian wage growth—and substantially improves the Basic Allowance for Housing.

### Force Structure and End Strength

The U.S. force structure and military end strength are roughly two–thirds their size at the time the Berlin Wall fell in November 1989. Most of this shrinkage occurred or was programmed before President Clinton took office. In recent years, the Department's focus has been on reshaping this smaller force to reflect the new post-Cold War threats and opportunities. Details on this military transformation are in Chapter 11. Adjustments to forces and end strength reflected in the FYDP and FY 2001 budget were based on requirements derived both from the QDR–based strategy for major theater wars and from the ongoing high intensity of U.S. global deployments and commitments.

### Recapitalization of U.S. Forces

To ensure America's technological and qualitative superiority on future battlefields, U.S. forces must be modernized with new systems and upgrades to existing systems. The new budget enables the Department to achieve its goal of increasing procurement funding to $60 billion by FY 2001.

For the modernization of U.S. forces to succeed, Congress must support the spending allocations proposed for DoD weapons development and procurement. Additionally, the Department must have congressional support for infrastructure reductions, acquisition reform, and other initiatives in order to achieve savings needed to help fund modernization.

### Funding for Unbudgeted Contingencies

Each year unbudgeted military operations, natural disasters, and other contingencies occur—often requiring the President to seek congressional support for covering the costs incurred. For FY 1999, Congress approved emergency supplemental appropriations to pay for Kosovo operations and other unbudgeted DoD costs. For FY 2000, $2.1 billion in supplemental appropriations are needed for Kosovo operations, the incremental cost of which was not funded in the year's Defense Appropriations Act.

### CONCLUSION

Events since the end of the Cold War have demonstrated the need for America to retain a strong global leadership role and a prudent defense posture. President Clinton's FY 2001 defense budget supports that need while remaining fiscally responsible.

# Part VI
# Statutory Reports

BLANK PAGE

# REPORT OF THE SECRETARY OF THE ARMY
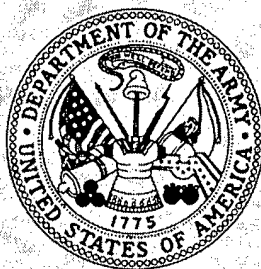
The United States Army was indispensable to the execution of the National Military Strategy (NMS) in FY 1999. Throughout the year, the Army met the nation's increasing requirements for making use of our land force component in response to rapidly changing world security needs. The nature of these requirements, from maintaining readiness for combat operations anywhere in the world, to conducting military exercises with and training the forces of friends and allies, to the critical and dangerous work of implementing the peace in Bosnia and Kosovo, underscores the vital role the Army will continue to play as the 21st century unfolds. The more than 100,000 soldiers forward stationed around the world, and the 25 to 30 thousand deployed to over 70 countries every day of the year, are a testament to the Army's boots on the ground support for U.S. leadership in the world. To meet the threats and challenges of the 21st century, the Army has accelerated its transformation to the future by developing a new Vision that stresses lighter, more lethal, more agile forces that require less lift and have a smaller logistical footprint. While striving to increase its effectiveness and efficiency, the Army remains ready to play its part in the execution of the NMS.

## A DECISIVE AND VERSATILE FORCE

The Army supports the NMS by maintaining a force capable of a full spectrum of military operations. It is designed to provide the joint team with decisive land combat power. Meeting this fundamental requirement for the world's only superpower entails a force of high-quality people, with modern equipment, trained in the broad range of skills required for modern military operations. The nature of this force, in turn, enables the Army to provide pivotal support for the three pillars of the NMS—shaping the international environment, responding to crises, and preparing for an uncertain future. Transformation of the Army requires maintaining the current warfighting capabilities that our regional commanders in chief are counting on, while investing in developing the new capabilities the Army's Vision calls for.

As of the end of FY 1999, the Army was the largest service component of DoD, with 479,426 active component soldiers, 564,305 reserve component soldiers, and 224,902 Army civilians. It is trained and equipped for the overwhelming and synchronized application of decisive combat power on land, and it performs this function better than any other land force on earth. Land power is uniquely decisive. Committing soldiers on the

ground is the ultimate statement of U.S. resolve to defeat an adversary or compel him to change his course of action.

Since the effective use of modern combined arms requires diverse capabilities, the Army trains soldiers in over 500 specialties. Skills that support the application of combat power also play a central role in operations aimed at shaping the international environment. Civil affairs, water purification, power generation, and engineering are just a few of the skills necessary for land combat which are also essential for stability and support operations. Furthermore, armies are the dominant component in the military forces of most nations. These forces, designed for common functions, share organizational features with the Army that facilitate cooperative endeavors such as combined training and exercises. Therefore, the United States Army is not only critical to America's ability to win wars, it is also the principal instrument to conduct military-to-military engagement to influence the capabilities, policies, and actions of other nations.

Thus, the Army is vital to meeting the requirements of the NMS. The Army's warfighting effectiveness stems from its mastery of the unique competency of land power—the ability to exercise, by threat, force, or occupation, comprehensive and continuous control over people, land, and resources. Due to the diverse range of specialized skills and the peerless abilities of well-trained American soldiers, the Army is well-suited to perform missions across the full spectrum of military operations. These are the characteristics that make the Army ready today—ready to defend freedom from the Demilitarized Zone of Korea to the deserts of Southwest Asia, ready to bring peace to the troubled streets of the Balkans, and ready to create hope for people the world over. Throughout FY 1999, the Army demonstrated its unique effectiveness for shaping the international environment in ways favorable to U.S. interests, responding to crises, and preparing for an uncertain future.

## SHAPING THE INTERNATIONAL ENVIRONMENT

America's Army conducted a wide range of shaping operations around the world in FY 1999. Operations in the Balkans and sustained presence in Korea and in the Middle East enhanced regional stability and reassured allies. Deployed soldiers practiced critical skills repairing or emplacing infrastructure in the wake of natural disasters and in support of nation building. The International Military Education and Training (IMET) program and numerous army-to-army activities abroad enhanced interoperability and fostered military values that enhance military professionalism, strengthen democracy, and stress protection of human rights. Through the presence of our forces, robust programs of nation-building, military-to-military engagement, and other activities, Army shaping operations contributed greatly to enhancing U.S. interests abroad in FY 1999.

While continuing its central role in Operation Joint Forge in Bosnia, the Army also assumed the principal role for the peace implementation mission in Kosovo, Operation Joint Guardian, in 1999. The NATO force in Bosnia was commanded by the Commanding General of United States Army Europe (USAREUR) from 1996 through 1999. One of the three multinational divisions comprising this NATO force includes 5,500 U.S. soldiers and is under the command and control of a U.S. Army division headquarters. This force monitors the most important crossing points on the Bosnia-Herzogovina and Federal Republic of Yugoslav border, supports civil implementation of the Dayton Peace Accords, and provides security for displaced person and refugee visits and returns. In addition to this continuing effort, the cessation of hostilities in Yugoslavia paved the way for the deployment of over 6,000 American soldiers in support of the Kosovo peace implementation force (KFOR). Throughout the region, America's Army continues to do what only a ground force can—promote a self-sustaining, safe, and secure environment in which democracy can take root. The U.S. Army creates the context in which U.S. and other governmental, nongovernmental, and international organizations can build anew the essential institutions of civil society consistent with U.S. values and interests.

Although events in the Balkans captured most of the world's attention, thousands of American soldiers performed other important overseas shaping functions as well. In Europe, USAREUR led U.S. participation in the Partnership for Peace (PfP), a NATO program designed to foster interoperability and cooperation between the 19 NATO members and 26 participating Partner nations. A total of nine PfP exercises were conducted in 1999; these exercises included participation by most NATO and Partner nations. Forces from 28 nations participated in Exercise Combined Endeavor, one of the largest PfP exercises conducted in FY 1999.

In the Middle East, the continuous presence of an Army headquarters, a mechanized task force comprising both

ground assets and attack helicopters, Patriot missile units, and other supporting forces helped deter aggression, reassure regional allies, and support implementation of UN resolutions. Forces deployed for Operation Desert Falcon and Operation Desert Focus maintained an in-theater Patriot capability. The forward positioning of these assets enhanced rapid response capability to the Middle East and demonstrated commitment to our allies. Army forces deployed to this area also provided important support for Operation Southern Watch, the joint and combined operation enforcing UN sanctions against Iraq. In the Sinai, FY 1999 marked the eighteenth year in which approximately 900 U.S. soldiers have helped monitor the treaty of peace between Egypt and Israel as part of the Multinational Force and Observers.

The 25,000 soldiers stationed on the Korean peninsula, as part of the nearly 100,000 U.S. service members either stationed or deployed in East Asia, remained a major bulwark for regional stability in Asia. Their presence underscored U.S. resolve, strengthened our nation's position in U.S./Republic of Korean talks with the North Koreans, and deterred North Korean adventurism even as North Korea continued development of its long-range missile program. Army forces stationed in Japan also contribute to stability in Asia; these units participated in Exercise Yama Sakura, the ground portion of a joint and combined exercise (Keen Edge) conducted with the Japanese in 1999. Around the world, the Army maintained forward-deployed forces and supported deployments that shaped the geopolitical environment in critical ways.

Because the preponderance of other nations' militaries consist of army and army-equivalent land forces, Army training of foreign military personnel constituted a significant portion of U.S. military engagement activities. Army Special Operations Forces (SOF) deployed to 22 nations to conduct training in mine awareness, mine clearing techniques, emergency medical care, and procedures for establishing national mine action centers. Army SOF also trained several African armies for peacekeeping operations and potential humanitarian crisis response under the African Crisis Response Initiative. Army National Guard (ARNG), U.S. Army Reserve (USAR) civil affairs units, the U.S. Army Corps of Engineers, and the Surgeon General also engaged in various efforts in Africa designed to support the transition to democracy and to improve infrastructure and health. The IMET program provided an outstanding vehicle for fostering cooperation and democratic values by training 6,929 students from 154

foreign countries. Most of this training took place in the United States, where the students not only received formal instruction but were also able to form friendships with American sponsors and experience our democratic and egalitarian society first-hand. The training of foreign military personnel under these programs expands the capabilities of other nations to support both their own people and the international community.

### U.S. Army School of the Americas

The United States Army School of the Americas (USARSA) is one program for training foreign personnel that is worthy of special note. Located at Fort Benning, Georgia, USARSA has provided high-quality professional military education in Spanish for more than 60,000 select personnel from Latin American armies over the past 54 years. Subjects taught include humanitarian demining, counterdrug operations, peacekeeping, and natural disaster response. USARSA is a key element in a U.S. regional engagement strategy that focuses on the military's role in strengthening democracy and protecting the institutions of civil society against external threats. USARSA graduates from nations throughout the region played key roles in the Military Observer Mission Ecuador and Peru that led to the successful resolution of the long-standing border dispute between those two nations in 1999. A graduate is credited with helping stop a 1992 coup attempt in Venezuela. Four other graduates have been instrumental in ending 36 years of civil war in Guatemala. The presence of USARSA graduates in key positions in the military, government, and economic institutions of the region over the past several decades have made the transition toward democracy easier in Latin America, a region in which Cuba is now the sole remaining authoritarian regime. USARSA's curriculum includes Army doctrine, a comprehensive human rights program, and instruction on the role of a professional military in a democratic society. Several investigations by external agencies have confirmed that the school's instruction is consistent with U.S. human rights policy. The Army is committed to taking the steps necessary to ensure USARSA's operations are fully understood and remain consistent with the expectations of Congress and the values of the American people.

### Counterdrug Efforts

In 1999, the Army supported the war on drugs through training and support of foreign counterdrug forces in many nations of Latin America, the Caribbean, and the heroin trafficking regions of Southeast and Southwest

Asia. Activities in these regions included SOF training of host nation personnel, as well as aviation, transportation, intelligence, planning, and reconnaissance support. In Colombia, for example, Army support to U.S. counterdrug efforts included training and equipping a special Colombian Army counterdrug battalion. Among other things, the Army also provided nearly $20 million in materiel support under the provisions of the Foreign Assistance Act. This support ranged from spare parts for UH-1 and UH-60 helicopters to binoculars and trucks.

Army support for the war on drugs extended into the domestic arena as well. More than 2,000 active and reserve component soldiers performed tasks ranging from construction of fences along the border with Mexico to providing intelligence analyst support to Drug Law Enforcement Agencies. The Army National Guard provided additional unique support to the 54 states and territories under the provisions of Title 32, United States Code. This support involved over 3,000 people and included cargo inspections and drug demand reduction activities. Both at home and abroad, American soldiers played a significant role in stemming this transnational threat.

## Nation Building Activities

In addition to their other activities, Army soldiers and civilians combined training with nation-building projects and other civic assistance efforts in FY 1999. For example, Army engineers repaired the roof on a charity hospital in Mongolia and repaired clinics, roads, and schools in the Marshall Islands. Through Medical Readiness and Training Exercises, Army reserve component personnel provided medical treatment around the world. In just one of these exercises, 44 soldiers from the 4224 U.S. Army Hospital treated more than 2,000 patients in Mariquita, Colombia. The Army also continued its work in Haiti under authority of Operation Uphold Democracy. Approximately 200 soldiers performed security missions as well as medical and civil assistance projects in support of this operation. In the Ukraine, USAREUR's 30th Medical Brigade provided surplus Army medical equipment to civilian hospitals in Operation Provide Hope. From August through October 1999, Army personnel delivered equipment and instructed Ukrainian personnel on its use. Through the professional work of its soldiers, the Army fostered good will while training and enhancing America's credibility abroad.

## RESPONDING

While training and engagement activities prevent and deter wars, the Army's core function is to remain ready to respond anywhere in the world to fight and win the nation's wars. The deployment of combat forces to Kuwait, Albania, and Kosovo in FY 1999 validated the Army's readiness to respond. Other emergency deployments arising from the Balkan crisis, Hurricane Mitch, and the unrest in East Timor underscored the Army's responsiveness and utility.

## Training to Respond

Effective response is the product of a rigorous training program. To that end, the Army conducted training at home station, deployments to combat training centers (CTCs), and major joint and combined training exercises in 1999. Home station training ranged from individual and small unit training to major exercises at brigade and division level. Having honed their skills at home station, some 82,000 soldiers were able to participate in 47 CTC rotations in FY 1999. These rotations afforded our soldiers the opportunity to conduct sustained operations against a highly skilled opposing force under realistic conditions. In 1999, CTC rotations were also used to prepare units for contingency operations in the Balkans. In addition to home station and CTC training, major joint and combined training deployments, such as Exercise Cobra Gold in Thailand, Ulchi Focus Lens in Korea, and Bright Star in Egypt, offered valuable opportunities for leaders to execute deployment plans and conduct operations upon arrival. The experience and proficiency gained by planning, resourcing, and conducting this training is essential to preserving near-term readiness.

## Operational Deployments

In November 1998, the United States and its allies conducted Operation Desert Fox, four days of bombing operations in response to Iraq's failure to comply with UN resolutions. The crisis erupted while the Army had two mechanized battalion task forces and an aviation task force training with Kuwaiti forces. The Army quickly deployed additional forces. Under control of Combined/Joint Task Force-Kuwait, these ground forces deterred Iraq from using the strikes as an excuse to move against Kuwait. The rapid buildup of this potent force highlighted the value of the Army's training and equipment prepositioning programs.

The Army also employed forces in support of the NATO bombing campaign against Yugoslavia from March to June 1999. In addition to providing nearly 200 augmentees to Joint Task Force-Noble Anvil, the Army deployed a 5,000-soldier strong task force—Task Force Hawk—to Albania in April to provide Army-specific capabilities for campaign planners. These soldiers demonstrated the Army's ability to deploy forces anywhere in the world, overcoming the most difficult terrain and weather conditions. The deployment of this warfighting force not only sent a clear signal of the coalition's resolve, but also put a capable force into position to participate in the peace implementation operation.

Two other deployments of Army personnel provided critical support to the successful implementation of U.S. policy in the Balkans by emplacing the infrastructure to support follow-on operations in Kosovo and supporting refugees. In Europe, U.S. soldiers designated as Task Force Sabre expanded the base camp that would later prove critical as a staging base for the U.S. contingent to KFOR. This vital effort included the emplacement of key force protection and sustainment assets and was instrumental to the rapid introduction of U.S. forces into Kosovo after the bombing stopped. Closer to home, the Army's 507th Corps Support Group from Fort Bragg, North Carolina, formed the nucleus of a joint task force (JTF) helping to host displaced Kosovars at Fort Dix, New Jersey. JTF Provide Refuge, which also included active and reserve component augmentees, was the DoD element supporting this Department of Health and Human Services endeavor from May through July 1999. In all, the task force cared for over 4,000 displaced Kosovars, underscoring the U.S. humanitarian commitment and helping preserve the NATO coalition's solidarity.

When U.S. forces crossed into Kosovo to begin the difficult task of bringing stability to the province, the Army led the way. Elements of USAREUR's 1st Infantry Division have provided the bulk of the U.S. contingent, dubbed Task Force Falcon, since the peace implementation operation began in June. On a daily basis, American soldiers are face to face with the people of Kosovo, doing the dangerous and difficult work of disarming former combatants, resettling refugees, protecting minority populations from retribution, and setting the context for the rebuilding of the democratic institutions of civil society. In addition to the contribution of its U.S. elements, Task Force Falcon is providing command and control for more than 3,100 Greek, Polish, Russian, Ukrainian, United Arab Emirates, Jordanian, and Lithuanian soldiers. Together, this combined force conducts patrols, operates roadblocks and checkpoints, and guards key facilities in the designated U.S. sector. As it has in Bosnia, the Army is leveraging its diverse skills to provide a force tailored to this challenging mission.

In addition to providing forces for missions such as those in the Balkans and the Middle East, the Army led U.S. efforts to assist the nations of Central America in the wake of Hurricanes Georges and Mitch in 1999. The XVIII Airborne Corps, with reserve component augmentation in critical specialties, deployed more than 4,000 soldiers to help alleviate the immediate suffering caused by Hurricane Mitch. Dubbed Operation Strong Support, this effort lasted from November 1998 until January 1999. It provided aviation, logistics, emergency evacuation, engineer assessment, road repair, and medical care for affected areas in Honduras, Nicaragua, El Salvador, and Guatemala. Operation Strong Support was followed immediately by the annual Exercise Nuevo Horizontes (New Horizons), which was enhanced to provide continuing, comprehensive assistance to Central American and Caribbean nations devastated by Hurricanes Georges and Mitch. More than 20,000 USAR and ARNG soldiers worked on civil projects designed by the Department of State and operated medical support sites for the local populace from January through August 1999. In all, American soldiers provided medical treatment for more than 100,000 local civilians and either built or repaired 33 schools, 12 clinics, 27 high-capacity wells, 26 bridges, and 175 kilometers of road.

Beginning in September 1999, the Army was also engaged in operations in Indonesia. American soldiers performed critical medical, intelligence, communications, and civil affairs tasks as part of the U.S. contingent supporting Operation Stabilize in East Timor. The rapid deployment of soldiers in these key specialties was a noteworthy contribution to this important operation.

### Responding at Home

Throughout the year, the Secretary of the Army's role as DoD Executive Agent for Military Support to Civil Authorities kept the Army in the forefront here at home. In fact, the Army coordinated military support to civil authorities on 38 separate occasions during FY 1999. Army National Guard soldiers provided additional critical assistance to local authorities throughout the year while acting under state control, and the Army trained first responders throughout the nation on consequence management procedures for weapons of mass

destruction. Whether responding to tornadoes in Oklahoma, wild fires in California, or hurricanes along the eastern seaboard, the Army's timely and comprehensive efforts were vital to the Federal Emergency Management Agency's response capability.

The recent accomplishments and activities of the Army clearly demonstrate its effectiveness and versatility. Thus, the Army remains ready, when called upon, to provide ground combat capabilities, such as those fielded in Kuwait during Operation Desert Fox. Even in Operation Allied Force, where Army forces were not committed to combat, our soldiers and civilians provided critical enabling capabilities for U.S. military operations. Throughout the year, Army capabilities were an important contributor to achieving national objectives.

## PREPARING FOR THE FUTURE

The Army worked hard in FY 1999 to balance global shaping and responding operations with the imperative of preparing for an uncertain future, including transforming the Army. Contingency operations abroad generated additional training and operational requirements, added to wear and tear on equipment, and increased personnel tempo. Supplemental appropriations eased the funding impact of contingency operations on near-term readiness, but did not address many funding requirements for modernization and recapitalization. The Army's new Vision will drive the transformation of the 21st century Army so that it projects combat power more rapidly, dominates at any point on the spectrum of operations more readily, and sustains its readiness more affordably than today's force.

### The Army Vision

The spectrum of 21st century operations demands land forces in joint, combined, and multinational formations for a variety of missions extending from humanitarian assistance and disaster relief to peacekeeping, peacemaking, and winning major theater wars—our non-negotiable contract with the American people. The Army will be responsive and dominant at every point on that spectrum. It will provide to the nation an array of deployable, agile, versatile, lethal, survivable, and sustainable formations, which are capable of reversing the conditions of human suffering rapidly and resolving conflicts decisively.

The Vision calls for improving strategic responsiveness. To achieve this, the Army will continue to emphasize forward-deployed forces and forward-positioned capabilities, engagement, and enhancing the deployability of all Army forces. Ultimately, Army units will erase the line between light and heavy by developing organizations with the deployability of today's light forces but with the lethality and mobility of today's heavy forces. Restructuring of two initial brigades will begin in FY 2000 at Fort Lewis, Washington. These brigades will initially feature off-the-shelf equipment to stimulate development of doctrine, organizational design, and leader training. The Army will restructure its modernization program to support development of tailor-made platforms for the Objective Force. The Army's goal is to improve its responsiveness and deployability so that it can put a brigade combat team anywhere in the world in 96 hours after liftoff, a warfighting division in 120 hours, and five divisions in 30 days.

The units that the Army deploys within these timelines will be capable of dominating at any point on the spectrum of operations because they will be designed, manned, and equipped to transition rapidly from stability and support operations to major theater warfare. Army Service Component Commands and corps will have the resources to function as Joint Force Land Component Command and Army Force headquarters. The warfighting units will be manned to their full authorizations with soldiers and leaders ready for whatever mission they are given. Their equipment will continue to provide our soldiers with overmatching capabilities. It will incorporate information technology as well as material technology.

While continuing to ensure overwhelming combat power in the theater of operations, the Army will aggressively reduce its logistics footprint by controlling the number of systems deployed, employing the full reachback capability technology allows, and evolving systems that are easier to sustain. Deploying only essential capabilities while using modern technology to streamline in-theater support functions is one step towards achieving the goal of a smaller logistics footprint. For instance, communications technology may provide commanders the intelligence, medical, and other support capabilities needed for some contingencies without deploying the equipment and specialists necessary in the past. Logistics modernization initiatives are already reducing the need for large stockpiles by providing near real-time visibility of supplies and requirements. As technology allows, the Army will move to an all-wheeled fleet of vehicles. Seeking common platform,

182

common chassis, and standard caliber designs for these follow-on systems will further reduce sustainment requirements.

The Army's Vision also stresses investing in our most important asset—our people, including their military and civilian education, and their housing and health care. Additionally, the Army will continue to pursue two critical initiatives that contribute to reaching our Vision—digitization and active component/reserve component integration.

## Digitization and Active/Reserve Component Integration

Digitization is the process of applying digital information technologies to allow warfighters to share a constantly updated common view of the entire battlefield. It will enhance combat power by integrating existing command and control capabilities with communications, sensors, and combat platforms. Digitization will increase effectiveness and efficiency by combining digital hardware with trained soldiers in organizations designed to optimize the information sharing that technology allows.

In anticipation of the enhancement to combat power afforded by digitized platforms, the Army began to transition some divisions to a new design in 1999. Key features of this new design include a reduction in the number of tanks and infantry fighting vehicles in mechanized battalions, an increase in the number of dismounted soldiers in infantry platoons, and the integration of reserve component units and personnel throughout the division. The new design will take several years to implement, but it will reduce the strategic lift requirement for affected divisions by 11 percent.

Another force structure initiative in 1999 was the establishment of two integrated divisions. These divisions combine active component division headquarters with three ARNG enhanced Separate Brigades (eSBs). The two divisions established were the 24th Infantry Division (Mechanized) (-) and the 7th Infantry Division (-). The 24th ID (M)(-) has its headquarters at Fort Riley, Kansas, and includes mechanized eSBs from North Carolina, South Carolina, and Georgia. The 7th ID (-) has its headquarters at Fort Carson, Colorado, and includes infantry eSBs from Arkansas, Oklahoma, and Oregon. While these units are not deployable as divisions, the full-time planning and training management

support of the active component headquarters will facilitate the readiness of the assigned eSBs.

## Missile Defense and Domestic Preparedness

The Army was also active in the areas of missile defense and domestic preparedness, experiencing significant successes in the national and theater missile defense programs under its purview. As the Executive Agent for the development of the dedicated National Missile Defense (NMD) ground-based elements, the Army supported the Joint Program Office for NMD in the initial hit-to-kill flight test of the Exoatmospheric Kill Vehicle (EKV) in October 1999. The EKV correctly discriminated between a reentry vehicle and another object, tracking and destroying the reentry vehicle. In the theater missile defense realm, the Patriot Advanced Capability-3 (PAC-3) and Theater High Altitude Area Defense (THAAD) programs both had successful intercepts as well. The success of the PAC-3 upgrade capitalizes on the nation's investment in the Patriot system, the only fielded U.S. system capable of defeating theater ballistic missiles (TBM). While PAC-3 will provide enhanced lower-tier theater missile defense in the short term, THAAD's two successful intercepts were encouraging milestones on the road to upper-tier protection as well. Together, PAC-3 and THAAD promise critical protection against the TBM threat to soldiers in the field.

The Army also continued its role as the Executive Agent for the DoD Weapons of Mass Destruction (WMD) Domestic Preparedness Program in FY 1999. Army personnel supported the Federal Training Team in providing train-the-trainer training to 33 cities. Almost 19,000 people in 65 cities had received this training as of the end of the fiscal year. The Army also fielded special teams designed to improve the nation's ability to respond to terrorist or other attacks involving WMD. Ten WMD Civil Support Teams (formerly called Rapid Assessment and Initial Detection Teams) were activated and trained. These teams, each consisting of 22 full-time ARNG or Air Guard personnel, are aligned with the ten federal regions and stand ready to support civil authorities in the event of a disaster involving WMD. In addition to this effort by the National Guard, the USAR began training its chemical and logistical units to provide augmentation in the event of a WMD emergency. These critical missile defense and domestic preparedness capabilities contribute significantly to national security.

183

## OTHER ACTIVITIES IN SUPPORT OF THE NATION

The Army performed important functions related to treaty implementation in 1999. For instance, the Army is the DoD Executive Agent for Chemical Demilitarization. Under provisions of the Chemical Weapons Convention and applicable laws, the destruction of the U.S. stockpile of chemical agents, munitions, and non-stockpile chemical warfare materiel is proceeding on schedule. To date, the Army has safely destroyed more than 17 percent of the chemical agents stored in the U.S. stockpile.

The Army also led U.S. efforts pertaining to the hand over of the Panama Canal and the withdrawal of U.S. forces from Panama. The Secretary of the Army is the Secretary of Defense's designee to the Board of Directors of the Panama Canal Commission (PCC) and serves as Chairman of the Board. It is through this role that the Secretary of the Army exercises the authority of the President of the United States with respect to the Panama Canal Commission. The PCC Board of Directors has been very active preparing the transfer of the Canal and overseeing an ambitious capital improvement program. Regarding our military presence in Panama, as the DoD Executive Agent for implementation of the Panama Canal Treaty, the Army orchestrated the final drawdown and transfer of U.S. forces out of Panama. This effort entailed successfully transferring five major installations, several support facilities, and over 50,000 acres of former military ranges to Panama. Our support for endeavors such as Chemical Demilitarization and the implementation of the Panama Canal Treaty is a strong endorsement of the technical competence and versatility of Army leadership, soldiers, and civilians.

## MEETING THE RECRUITING AND RETENTION CHALLENGE

FY 1999 was one of the most challenging years for recruiting since the beginning of the all-volunteer force; however, record reenlistment rates helped the Army meet its required end strength. The ARNG exceeded its recruiting quota, accessing 132 soldiers above its target of 56,958, but the active component fell about 6,300 soldiers short of its goal of 74,500, and the number of USAR recruits was 10,300 below the goal of 52,084. A booming economy, low unemployment, and increased opportunities for college undoubtedly contributed to the difficult recruiting environment. However, new initiatives sparked a year-end upturn in the number of accessions and provided a good head start for the challenge of meeting FY 2000 recruiting targets.

To meet the challenge of recruiting in the post-drawdown era, the Army is aggressively restructuring its entire recruiting operation, including upgrading its research into youth attitudes; improving its in-house marketing expertise; fully reviewing its advertising strategy and execution; and improving training, positioning, and incentivizing of recruiters. The Army will also field two new recruiting initiatives. The College First program will try to attract candidates who are already in college or who are college bound by providing education benefits up front in return for a period of service. Another pilot program will attract high-quality, non-high school graduates who score well on motivation indicators and mental aptitude tests. This program will offer assistance in obtaining a General Equivalency Diploma (GED) to a select number of candidates. The Army will continue to emphasize creative solutions to the challenge of attracting sufficient numbers of young Americans to military service.

Notwithstanding its recruiting challenge, the Army met its end-of-year strength requirements because of its tremendous success in retention. The active component exceeded its retention goals by 6,147 soldiers in FY 1999. Enhanced bonus programs implemented by the Army, as well as the improvements in military compensation begun by the Administration and Congress, have bolstered retention efforts.

Sustaining this kind of retention success is important for readiness, but will become more difficult as today's recruiting shortfalls lead to smaller cohorts of soldiers available for reenlistment. Recent studies indicate that the propensity to remain in the military has declined steadily among junior officers (13 percent) and non-commissioned officers (17 percent) over the past nine years. These statistics have correlated well with actual retention in the past and merit further observation. Both military and civilian leaders must continue to take steps to improve quality of life and compensation if the Army is to retain sufficient numbers of our high-quality soldiers, noncommissioned officers and officers.

Though not a recruiting program, the expansion of Army Junior Reserve Officer Training Corps (JROTC) programs may help motivate young Americans toward military service. These programs will educate America's youth about the military while providing them with

the discipline and values that will contribute to their future success. With the assistance of several distinguished members of Congress, the Army developed a plan to expand its JROTC program over the next five years to include 275 additional high schools. The expansion will bring the total number of high schools offering Army JROTC to the congressional ceiling of 1,645. Participation in JROTC increases self-confidence, attendance, and performance among high school students. The expansion of JROTC will inform young Americans about the opportunities available in the military while providing a positive influence during the critical high school years.

## INCREASING EFFICIENCY: THE REVOLUTION IN BUSINESS AFFAIRS

Improving efficiency is another way the Army is striving to maintain readiness within fiscal constraints. Resource constraints and increasing commitments have made efficiency an imperative. The Army has responded to this challenge by implementing a series of Defense Reform Initiatives. Among the Army's successes are a number of programs designed to reduce the cost of day-to-day operations, streamline its logistics systems, and reduce excess infrastructure. Under the competitive sourcing initiative, for instance, organizations and installations examine selected operations to determine whether they might be performed more efficiently by either a streamlined government workforce or a private organization. The Army plans to study operations affecting 73,000 positions by FY 2005 and has initiated studies affecting 40,000 positions over the past two years. This initiative will save approximately $2.8 billion by the time it is completed.

### Logistics Modernization

The Army is also achieving significant efficiencies by using information technology to revolutionize its logistics systems. A series of ongoing initiatives dramatically reduces logistics costs by reducing the quantities of supplies maintained in stockpiles around the world. Information technology makes this possible by providing global visibility of materiel. Global visibility makes possible more efficient use of existing stocks. The Single Stock Fund (SSF) initiative, for example, capitalizes on this increased efficiency by merging wholesale and retail portions of certain Army supply activities, including repair parts and packaged petroleum products. The SSF will allow customers to use a single,

nationally managed Army inventory, thereby eliminating retail stocks.

### Base Realignment and Closure

Reducing excess infrastructure continues to be one of the most effective ways to improve efficiency. The Army has reduced its infrastructure by only 21 percent over the past 10 years, while its force structure has decreased by about 33 percent in the same time period. The Base Realignment and Closure (BRAC) process is the most powerful tool for decreasing the expenditure of scarce Real Property Maintenance (RPM) dollars on excess infrastructure. The Army has completed closures and realignments authorized under three of the four BRAC processes completed to date, and annual recurring savings have exceeded the cost of implementing authorized actions since FY 1997. Closures and realignments authorized under the last BRAC process are on schedule to meet the July 2001 deadline for completion. Environmental cleanup and property disposal associated with all four BRAC processes will continue through FY 2005. The Army strongly supports the DoD request for additional BRAC authorizations as part of its ongoing efforts to support the Defense Reform Initiatives and optimize conversion of scarce resources into required capabilities. Achieving base closure savings is critical to funding Army transformation initiatives.

### Residential Communities Initiative

One area of the Army's infrastructure that received a great deal of attention in FY 1999 was Army Family Housing. Faced with an enormous facilities backlog to eliminate inadequate government housing, the Services were authorized by the 1996 Defense Authorization bill to attract private sector expertise and capital to improve housing facilities and services provided to military members and their families. Pursuant to this authorization, the Army developed its Residential Communities Initiative (RCI), a plan to privatize Army Family Housing by FY 2005. In response to congressional concerns about the pace of service privatization programs, the Army added $250 million in traditional Army Family Housing funding back into its Military Construction program for fiscal years 2001 through 2005. Also, privatization initiatives were scaled back to Fort Carson, Colorado, and three pilot RCI sites: Fort Lewis, Washington; Fort Hood, Texas; and Fort Meade, Maryland. The Army is excited about the potential of RCI to deliver the kind of quality housing that contributes to soldier retention.

## FY 1999 ARMY FUNDING

The Army's Total Obligation Authority for FY 1999 was $69.2 billion. Of this amount, the Army received $26.7 billion for the Military Personnel accounts, $25.3 billion for the Operation and Maintenance accounts, and $13.9 billion for the Investment accounts. The remainder was applied to other accounts, such as Military Construction, Army Family Housing, and Environmental Restoration. In order to fully fund operating tempo (OPTEMPO) for priority units, the Army funded Base Operations (BASOPS) and RPM below desired levels. In addition to the original FY 1999 budget appropriation, the Army received funding from several non-offsetting supplemental appropriations acts, including $2.9 billion for Contingency Operations. The Army reprogrammed $375.9 million in FY 1999, mostly to address readiness issues, closeout costs for the Conventional Ammunition Working Capital Fund, and other requirements. The source for this reprogramming was under execution savings in the Military Personnel accounts. The Army is committed to helping itself as much as possible to meet the funding requirements of Vision transformation without jeopardizing current capabilities or sidetracking critical recapitalization efforts.

## CONCLUSION

From the tense streets of the Balkans to Korea's Demilitarized Zone, the United States Army stands ready to defend and promote the nation's interests. It is a quality force composed of America's sons and daughters—citizens who have met stringent entry requirements and endured rigorous training to earn a place in the world's best Army. Having earned this distinction, America's soldiers are frequently called upon to serve long tours in dangerous places accomplishing difficult missions. Wherever they go, they are the living, breathing symbols of a society in which people of different religions and ethnic backgrounds live and work together productively and in harmony—a society with an economy, an infrastructure, and a vitality that are the envy of much of the rest of the world.

When we send our sons and daughters abroad to improve the international environment, the freedom of the society they represent is their most powerful tool. American soldiers are potent symbols of this freedom and of the power and promise of America. They are volunteers, serving in a values-based organization that exemplifies loyalty, duty, respect, selfless service, honor, integrity, and personal courage. In the midst of foreign lands struggling to achieve basic order and dignity, our soldiers are a beacon that illuminates what is possible.

From Fort Bragg, North Carolina, to the jungles of Colombia, the Balkans, and elsewhere around the world, 65 brave American soldiers gave their lives in 1999 training hard and performing dangerous duties in support of our nation. Their service and sacrifice is a reminder of the generations of soldiers who have served and sacrificed on behalf of our nation for over 224 years. As it has been throughout our history, only the determination and vigilance of this and succeeding generations can safeguard the freedoms that make our nation great. We must ensure that our Army has the resources to prepare for tomorrow as well as meet the requirements of today.

Louis Caldera
Secretary of the Army

# REPORT OF THE SECRETARY OF THE NAVY

The Navy and Marine Corps provide the nation with a continuous, adaptable, and active instrument of security policy with which to promote stability and project power. Naval forces shape the global security environment; help assure access to regions of vital interest; and permit timely, and frequently the initial crisis response from the sea. The ability to reassure friends and allies, deter, and when called upon, engage in combat at all levels of intensity makes the Navy-Marine Corps team especially useful to the nation in peace, crisis, and war.

## OPERATIONS IN 1999

Naval forces were called upon in 1999 to conduct myriad assignments, ranging from combat operations to humanitarian assistance. For example, during contingency operations in Kosovo, contributions included:

- Navy and Marine strike aircraft flew thousands of combat sorties as part of the air campaign, suffering zero losses and achieving remarkable levels of precision.

- Tomahawk Land Attack Missiles launched from surface ships and submarines struck 50 percent of key headquarters and other targets, achieving a 90 percent success rate in all weather conditions.

- The only standoff electronic jamming aircraft available to NATO coalition forces, Navy and Marine EA-6B aircraft accompanied all allied strikes during some 1,600 missions.

- Marines embarked in Navy amphibious ships provided presence ashore in support of efforts to aid Kosovar refugees.

- As part of the Kosovo Force, Marines of the 26th Marine Expeditionary Unit (MEU) were among the first U.S. ground troops to enter Kosovo.

Other significant operations in 1999 include:

- Following a devastating earthquake, Sailors and Marines from the Kearsarge Amphibious Ready Group (ARG) and 26th MEU provided humanitarian assistance to Turkey.

- Elements of III Marine Expeditionary Force formed the core U.S. peacekeeping contribution in East Timor.

- Navy carrier battle groups (CVBG) maintained a continuous presence in the Arabian Gulf, conducting strike operations and continuing Maritime

Interdiction Operations in support of UN sanctions against Iraq.

## NAVAL FORCES IN THE 21ST CENTURY

Projecting U.S. power and influence from the sea to directly shape events ashore is the essence of the Navy and Marine Corps' contribution to national security. Naval forces are as unique as the medium in which they operate. Because they are readily sustained on the scene—either visibly, over the horizon, or under the seas—they give our National Command Authority hours, days, weeks, and even months to gain intelligence, conduct diplomacy, avert crisis, build coalitions or, if necessary, act unilaterally. Further, naval forces can exploit the freedom of maneuver afforded by the seas to respond to contingencies around the world.

## READINESS AND MODERNIZATION

Recruiting, training, and retaining quality people is key to the Naval Services' continued success. To succeed on the complex battlefields of the future, Sailors and Marines will require judgment, strength of character, and the ability to make sound, timely, and independent decisions. We must, therefore, invest wisely in the areas that together define the Quality of Profession in the Naval Service. By making smarter use of our resources, especially modern technology, we can challenge our people with rigorous and meaningful training and education and help them hone their proficiency in the use of increasingly sophisticated weapons, sensors, and information systems. Regional experts must also be cultivated—people who know the cultures of the world like they know their own. Our recruiting efforts must extend to all segments of the population so that we get the talented people we need while remaining connected to society at large. Finally, we must act aggressively to improve the Quality of Life of the entire Navy-Marine Team—Sailors, Marines, civilians, and their families.

Recent improvements in military compensation, including the enhancements to basic pay, retirement, and special incentive pays, should have a positive effect on our ability to attract and retain high-quality individuals. Although too early to fully quantify the results of these initiatives, early feedback from the fleet and operating forces appears positive. These improvements, however, must not be viewed as a one-time fix. Rather, they must represent a commitment to sustaining a healthy standard of living for the members and the families of a smaller, busier force. Consistent support for competitive compensation will be a key factor in addressing recruiting and retention challenges.

### Recruiting Outlook

The Marine Corps has met or exceeded its accession goals since June 1995. To maintain their successful recruiting stance in the future, the Marine Corps is restructuring the locations of its recruiters to more effectively solicit target populations. The Navy met its accession mission and end-strength requirements in FY 1999. Additionally, the Navy has reduced the 18,000 at-sea billet gap identified last year by 35 percent in 1999. Several initiatives contributed to this success, including increasing the recruiting force by over 30 percent; expanding the number of recruiting stations; increasing financial and educational incentives, such as the Navy College Fund; and refocusing their advertising strategy. The recruiting environment however, remains challenging. While the Navy met its accession requirements for FY 1999, it was not able to improve its recruiting posture entering 2000 as the Delayed Entry Program numbers remain lower than desired.

### Retaining Our Best People

#### ENLISTED

Although Navy enlisted retention during 1999 was below our annual target and steady-state goals, the Navy retained enough Sailors to end the year about 1,000 over end strength. Short-term extensions, however, contribute to a higher retention rate, especially among first-term Sailors. Current enlisted retention for the Marine Corps is relatively stable. In 1999, the Marine Corps experienced reenlistment rates that were close to historical norms. Improved retention tools, including the Triad pay package, higher reenlistment bonuses, and better advancement opportunities are expected to contribute significantly to the Department's retention efforts.

#### OFFICER

During the past few years, declining fleet size masked the adverse impact of reduced accessions and lower retention. As the Navy approaches a steady-state force, some 53,000 officers will be required. Besides the compensation Triad, the FY 2000 National Defense Authorization Act included new bonuses specifically targeting unrestricted line officer retention, including continuation pay for Surface Warfare and Special Warfare Officers. It also included enhancements to other

special and incentive pays, such as a restructuring of Aviation Continuation Pay and increases to Nuclear Officer Incentive Pay rates. While it is too soon to gauge the full effect of these initiatives, these positive steps should help improve retention specifically within our critical warfare communities. While Marine Corps officer retention remained relatively stable in 1999, the Marines experienced a higher than normal attrition rate. Increased attrition rates lead to an erosion of experience particularly among the mid-range company grade ranks. Many of our mid-grade ground and aviation occupational specialties are already experiencing inventory imbalances and are exacerbated by the higher than expected attrition rates.

### Civilian Retirement Bow Wave

Over 27 percent of the Department's civilian workforce will be eligible for retirement in the next 5 years, including a large percentage of our highly technical employees. With challenges such as regionalization, downsizing, and competitive sourcing changing the way we do business, a viable, flexible, and multi-skilled civilian workforce will continue to be a part of the critical backbone of our total force. Multiple innovative recruitment strategies designed to attract and retain young college graduates as well as a highly skilled technical professional talent pool will be needed.

### Smart Work

As a matter of principle and good business, we need to treat our people as professionals even as we seek to employ them in demanding jobs. By allocating sufficient resources to help our Sailors and Marines do their jobs smarter, Smart Work initiatives will contribute to improved readiness. By substituting capital and technology for labor, commercially available services and better materials for labor-intensive tasks, such as painting, will free Sailor and Marines for high value-added work and combat training. Acquiring commercial off-the-shelf (COTS) tools and altering working conditions will save Service members time and effort. The Department is also investing in research and development to design labor-saving tools where not commercially available.

The imperative to work smarter is also being addressed by the Navy's Interdeployment Training Cycle (IDTC) Workload Reduction Initiative. Over the past year, the Navy has scrutinized the training and inspection requirements levied on operational units during the period

between deployments. While individually worthwhile, these requirements have collectively become a huge weight on our Sailors. As a result of this analysis, the IDTC burden was reduced substantially while maintaining critical readiness checks prior to deployment.

### Education Initiatives

The higher tempo of future operations will test our Sailors' and Marines' abilities to innovate, adapt, and apply their knowledge and experience to dynamic situations. Continuous learning will be necessary for keeping our Sailors and Marines on the cutting edge. The Department will put career-long emphasis on each Service member's educational and training accomplishments.

### Near-Term Readiness

Near-term readiness remains good for the Navy and the Marine Corps. To date, the Navy and Marine Corps continue to meet commitments primarily by drawing from normally deployed rotational forces rather than ordering additional deployments. We have done this by demanding more from our people and our equipment. Moreover, to some extent, deployed naval forces are able to maintain a high level of readiness only at the expense of non-deployed forces. In turn, this resource-shifting causes non-deployed units to overcome a larger hurdle during pre-deployment training. Similarly, the high state of readiness maintained for our front line Marine forces comes at the expense of equipment in organizations with a lower priority.

### Modernization – The Mid-Term

The understandable call to pay for current readiness first must be balanced with the imperatives to improve the equipment for tomorrow's conflicts. Modernization enables our current force to continue to be valuable in the years ahead while concurrently mitigating escalating support costs of aging equipment. Also, as technological cycle times become shorter than platform service life, it is imperative that we modernize the force through timely upgrades. The Department intends to modernize its Aegis cruisers, several aircraft types (F/A-18, P-3C, EA-6B, E-2C, and AV-8B), and possibly extend the service life of some of its SSNs. SH-60B/F helicopters will be upgraded to SH-60R models, while the CH60S will replace several older helicopter types.

### Recapitalization – The Long-Term Challenges

The Department continues to invest in new capabilities, to provide systemic replacement for aging platforms

and, to some extent, to maintain the economic viability of the industrial base that supports our armed forces. There is evidence, however, that in recent years we maintained our near- and mid-term readiness at the expense of investments in longer-term capabilities. Resolving this tension between current imperatives and long-term requirements has been, and will remain, a challenge. In fact, what was once a far-off issue is now a matter of some urgency. We are challenged to find funding to keep current and future shipbuilding plans on track.

Nonetheless, we are making substantial investments in programs that will be the core of our forces in the next century. The DD-21 destroyer, F/A-18 E/F Super Hornet, Joint Strike Fighter, CVN-77 and CVN(X) aircraft carriers, MV-22 Osprey, Virginia-class SSN, LHA replacement, the San Antonio-class LPD-17, and the Advanced Amphibious Assault Vehicle are each examples of core assets.

## *Lift Requirements*

The Department's amphibious lift plan provides the future amphibious force with a flexible, crisis-response capability. Ultimately, the amphibious force will consist of 12 Tarawa- and Wasp-class LHA/LHDs, 12 San Antonio-class LPD-17s, and 12 Whidbey Island- and Harper's Ferry-class LSD-41/49s, capable of forming 12 integral ARGs or operating independently in a split-ARG/MEU(SOC) configuration.

The Department's sealift assets include afloat prepositioned stocks maintained around the world, as well as ships earmarked for rapid surge deployment of forces from the United States, supporting all four Services and the Defense Logistics Agency. Each of the three Maritime Preposition Squadrons carry unit equipment and supplies to support a Marine Expeditionary Brigade for 30 days of combat. Enhancing our capabilities as defined in *Operational Maneuver From the Sea*, we continue to pursue our Maritime Prepositioning Force Enhancement (MPF(E)) and Maritime Prepositioning Force Future (MPF(F)) programs. With the fielding in FY 2000 of the first of three ships, the MPF(E) program will add one ship to each squadron creating space for a Navy Fleet Hospital, Naval Mobile Construction Battalion, and Expeditionary Airfield. MPF(F) will combine the capacity and endurance of sealift with enhanced speed and flexibility of airlift, to marry-up forces and equipment in a forward area. With onboard cargo handling systems compatible with existing MPF

ships and commercial systems, we will increase the speed and efficiency with which we reinforce our assault echelons ashore.

To maintain our emergency surge capability, 20 Large Medium Speed Roll-on/Roll-off ships are being delivered through FY 2002, adding approximately five million square feet of lift to current Army prepositioning and surge capacity.

## *Infrastructure and Environmental Challenges*

Shore facilities are important, but only select facilities (bachelor quarters, utilities, and waterfront, airfield, and training facilities) are maintained at high conditions of readiness. All other shore facilities are funded to lower readiness levels. The Navy plans to demolish 9.9 million square feet of excess or obsolete infrastructure by FY 2002 to help reduce infrastructure operating costs. Backlog of maintenance and repair of real property is currently over $2.5 billion and projected to peak at $2.8 billion by FY 2004.

The Department continues its active program of environmental compliance and stewardship both afloat and ashore. We are pursuing research and development of technologies and innovative pollution prevention strategies to effectively meet our environmental requirements. This research recently focused on marine mammal protection, contaminated site cleanup, and hull paints/coatings. Environmental considerations are weighed when acquiring weapon systems and platforms, and are reviewed periodically throughout each program's life cycle.

## TRANSFORMATION PROCESSES

Dealing with the Department's challenges on a sustained basis requires innovation, solving of difficult interoperability and integration problems, and the steady pursuit of promising scientific and technological initiatives. We are actively pursuing opportunities that will transcend incremental efficiency improvements by transforming the premises by which we live, work, and fight.

### *Navy-Marine Corps Integration Efforts*

The potential benefit from increased Navy and Marine Corps integration, from warfighting doctrine to procurement strategies, is compelling. Our carriers and large-deck amphibious ships are being fitted with identical or similar communications and command and control subsystems resulting in improved speed of information flow between CVBGs and ARGs. Additional

integration initiatives include developing a common aviation plan; replacing numerous independent local area networks with a single Navy/Marine Corps Intranet; and the collaboration of command, control, and communications staffs.

## Innovation

The Navy and the Marine Corps continue to pursue initiatives to translate capstone concepts like Network-Centric Warfare and *Operational Maneuver from the Sea* into reality. The Naval Warfare Development Center's Maritime Battle Center and the Marine Corps Combat Development Command's Warfighting Laboratory explore candidate concepts, tactics, techniques, and procedures for the application of advanced technologies. Navy Fleet Battle Experiments and Marine Corps Advanced Warfighting Experiments test these new doctrines and ideas in the field, assess the utility of new technologies, and explore new operational capabilities and organizational arrangements. The empirical results are returned to the Development Commands for evaluation.

## Interoperability Improvements

The Services are making significant investments in fielding interoperable systems and migrating legacy systems into the netted world. Some key command, control, communications, computers, intelligence, surveillance, and reconnaissance (C$^4$ISR) systems in development include the Cooperative Engagement Capability, the Single Integrated Air Picture, the Common Command and Decision System, the Global Command and Control System-Maritime, and the Marine Air-Ground Task Force Software Base Line. C$^4$ISR systems for joint, allied, and coalition forces are being developed and coordinated to make interoperability a reality. Use of COTS technology, international standards, and common architectures offer opportunities to avert technology gaps with allies and provide the most economical course for achieving required capability.

## Reserve Integration

The effective integration of the Reserve component with active duty components is more important as demand for military forces increases and the active force stabilizes at Quadrennial Defense Review levels. We are starting to leverage the great potential in our Reserve communities better by identifying scenarios/roles that could cause short- or long-term activation of the Reserves. Many Reservists possess skills gained in the civilian workforce that can be called upon when required by our active forces. We are introducing a mechanism to identify the skill areas for which there is no active Departmental occupation counterpart. In addition to the value of their military specialty training and training for mobilization, Reservists provide an essential link to American society.

## Advanced Technologies

Application of advanced technologies will yield warfighting and cost benefits for tomorrow's platforms. By using advanced technologies in our next generation aircraft carrier program, we anticipate total life cycle cost savings of 30 percent for the second carrier of that class compared with today's Nimitz-class carrier, including a 20 percent reduction in manpower. The DD-21 destroyer will be the first major U.S. surface combatant designed as a single integrated system with the potential to reduce manning, as well as operating and support costs by up to 70 percent. The design/build program being used in the Virginia-class submarine program resulted in a stable design at the start of lead ship construction and should preclude costly design changes during construction. Additionally, the Department is making substantial investments in programs such as unmanned aerial vehicles and integrated electric powering of propulsion, combat systems, and ship services.

## Revolution in Business Affairs

As the Department transforms its warfighting capability, we also must improve fundamentally our supporting business processes. Frequently referred to as the Revolution in Business Affairs (RBA), the Department's goal is to deliver state-of-the-art capability from its acquisition and support organizations. A key to this goal is reduction in total ownership cost of equipment and operations.
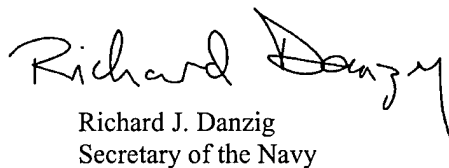
Over the past decade, America's commercial sector has reorganized, restructured, and adapted its business practices to maintain competitiveness in the global marketplace. While the Department of the Navy is not just a business, it maintains a large and diverse business infrastructure to support its warfighting forces. The Department's Business Vision and Goals provides guidelines for modernizing our business operations and benchmark our practices to the best of the private sector. The RBA seeks to implement management and cultural

changes to make our business side as effective as our warfighting side.

## CONCLUSION

The recent past has shown that now, as ever, the Navy and Marine Corps play a critical role in the protection and advancement of U.S. interests around the globe. On-scene naval forces conducting peacetime presence or crisis-response missions frequently are the nation's first hard evidence of our political will and national security policies. To deter aggression, foster peaceful resolution of dangerous conflicts, underpin stable foreign markets, encourage democracy, and inspire nations to join together to resolve global problems, the United States must have a multi-dimensional maritime force that is ready to shape and respond anywhere, anytime around the globe.

Richard J. Danzig
Secretary of the Navy

# REPORT OF THE SECRETARY OF THE AIR FORCE

Since its inception, the Air Force has built a proud legacy defending the interests of America and its allies around the globe. With the transition from the Cold War security environment complete, the Service has reduced its force structure by one-third and its foreign basing by two-thirds. However, post-Cold War foreign policy has required a four-fold growth in the number of overseas deployments since 1989. The Air Force is entering a new era—one in which expeditionary aerospace power is the cornerstone of America's military strategy and continuous temporary deployments of Air Force resources are the norm. To meet this challenge, the Air Force must convert to an expeditionary force structure, drawing on the Total Force team of active duty, Air National Guard, Air Force Reserve, and civilian employees. The Expeditionary Aerospace Force (EAF) reorganization adopted in 1998, and just recently implemented, meets both current and future national security requirements and brings with it global vigilance, reach, power, and leadership to the nation.

## MEETING THE CHALLENGES OF THE GLOBAL SECURITY LANDSCAPE

### Allied Force (Kosovo)

Nothing demonstrated the Air Force's ability to meet the demands of the post-Cold War era better than operations in Kosovo. The Air Force deployed over 18,000 personnel from the active and reserve forces to support Operation Allied Force, and committed 24,000 airmen stationed in Europe to this effort. The operation was a joint and allied effort, and the Air Force comprised nearly 50 percent of the combat force, delivered over 70 percent of the munitions, and provided almost all supporting aircraft. Operation Allied Force represented the most precise air campaign in history, with over 90 percent of the Air Force's strike assets able to deliver precision guided munitions. The success of the operation validated the Service's investment in precision platforms; precision, near-precision and stand-off weapons; stealth; real-time communications; unmanned aerial vehicles (UAVs); space systems; and intelligence, surveillance, and reconnaissance (ISR) aircraft. Furthermore, the war in Kosovo proved that many of the concepts that are central to our vision of an expeditionary aerospace force in the 21st century work in the way we hoped they would. We deployed to more than 20 expeditionary bases, used satellite communications (SATCOM) to reachback for intelligence, integrated UAVs into our tactical operations, and proved that our logistics system works.

Operation Allied Force served as an effective display of distributed operations, reachback, and employment of UAVs. Through distributed operations, the Air Force leveraged space reconnaissance and communication assets to accomplish a real-time relay of information to analysts and critical planners both in theater and in the continental United States (CONUS). By reaching back to CONUS for real-time support, the joint forces in theater were leaner and better supported than they would have been if the allies had to deploy these assets to the theater of operations. In addition, the joint force effectively used UAVs to complement manned U-2 reconnaissance missions and independently target mobile threats—providing instantaneous precision coordinates and the ability to laser designate those threats for strike aircraft. By combining distributed operations, reachback, and UAV operations into one team effort, NATO forces successfully attacked ground targets within hours and sometimes minutes of identifying them.

Operation Allied Force demonstrated that the Air Force's logistics system works and works well. The Service surged Air Force depots, established Centralized Intermediate Repair Facilities in theater, supplied robust readiness spares kits, and established logistics command and control ($C^2$) cells, all of which dramatically improved aircraft in-commission rates during operations. Additionally, the Air Force worked with private industry to successfully surge production capacity for munitions and aircraft self-protection (ALE-50 towed decoy) requirements. Air Mobility Command's Worldwide Express package delivery system also moved material from CONUS to theater in record time. Logistics response times averaged 8 days, a historical record, with 93 percent of replacement parts averaging just 3.7 days of in-transit time.

After 78 days of combat operations and the Operation Allied Force victory, the Air Force quickly transitioned to meet the challenges of the Kosovo Stabilization Force and ongoing Bosnia Stabilization Force. The Air Force remains committed to protecting the fragile peace in the region and continues to support the operation with 1,700 personnel and 20 aircraft. More importantly, lessons learned in Kosovo are being applied to future training and investment strategies.

## Contingency Operations and Humanitarian Relief

The Air Force continues to support ongoing contingencies—Operations Northern and Southern Watch in Southwest Asia. On two separate occasions, expeditionary forces in the southern no-fly zone were increased in support of Operations Desert Thunder and Desert Fox to counter Iraq's defiance of United Nations Resolutions. In both operations, the Air Force added nearly 40 additional aircraft and over 1,200 personnel. During these rapid build-ups, the air mobility forces proved once again why they are critical to our defense strategy, flying over 400 airlift missions and providing aerial refueling for Air Force, Navy, and Marine Corps combat aircraft. The Air Force also supported Operation Joint Forge, a NATO peace effort in Bosnia, and Operation Stabilise in East Timor.

The Air Force was heavily tasked in 1999 for its mobility and infrastructure repair capabilities in support of humanitarian relief operations. When Hurricane Mitch devastated Central America, the Air Force lifted 10 million pounds of food, medical supplies, and relief workers into the region. In addition, Operation Shining Hope became the lifeline support for some 1.6 million Kosovars displaced into Albania—over 850 Air Force personnel provided civil engineering, logistics, security, and more than 2,500 airlift missions. We were also there to support earthquake relief in Turkey and Taiwan with relief missions and U.S. search and rescue teams. On a day-to-day basis, the Air Force continues to lend its expertise to local authorities in the fields of fire fighting, environmental clean-up, explosive ordnance disposal, emergency medical response, and search and rescue.

## Counterdrug/Counterterrorism

The Air Force continues to play an important role assisting drug enforcement agencies. The Air Force orchestrates airborne and ground-based radar, intelligence, surveillance, refueling, and reconnaissance platforms to intercept and track smugglers far south of our borders. To combat terrorism, the Air Force created new vulnerability assessment teams and conducted 36 vulnerability assessments at air bases and operating locations around the globe. These teams provided immediate short-term solutions and long-range recommendations to protect Air Force personnel, their families, and other Air Force critical resources.

## Deterrence

While the Cold War nuclear threat has subsided, the requirement to demonstrate our national resolve to any potential aggressor remains at the heart of our national

security. The Air Force contributes intercontinental ballistic missiles (ICBMs), manned bombers, and command and control assets to the joint nuclear deterrent triad. The Air Force is investing in Minuteman III with several life extension programs and is making improvements to the B-2 and B-52 fleets. Air Force B-2 and B-52 bombers remain the most flexible leg of the triad, retaining their importance as a strategic nuclear platform even as their conventional role expands. These programs, along with investments in secure robust command and control, provide the National Command Authorities a secure means to command the triad and ensure the capability to respond, even after an attack.

## ORGANIZED TO WIN

Peacetime contingency operations over the past decade have placed heavy demands on Air Force people and equipment. To meet these requirements, the Air Force adopted the Expeditionary Aerospace Force reorganization in 1998 and continued to implement that reorganization and related Total Force and aerospace integration reforms in 1999.

### Expeditionary Aerospace Force

In August 1998, the Secretary and Chief of the Staff of the Air Force announced the EAF concept. EAF provides the commanders in chief (CINCs) forces tailored and trained for specific requirements and provides stability and predictability to the force. On October 1, 1999, we made the first deployment of reorganized forces. The new EAF concept enables the Air Force to meet the nation's 21st century national security challenges. EAF represents a major change to the Air Force's Total Force structure and culture. The Air Force operationally linked geographically separated units into 10 Aerospace Expeditionary Forces (AEFs), each with a full complement of aerospace power. AEFs are scheduled on a 15-month cycle with 90-day vulnerability periods, while two Aerospace Expeditionary Wings are available for quick response in crisis situations. The EAF also contains five mobility headquarters units that can deploy for humanitarian relief operations. By March 2000, the Air Force will have deployed six of 10 AEFs to support worldwide commitments. The Air Force continues to hone the EAF concept, incorporating lessons learned from ongoing aerospace expeditionary force deployments.

### Total Force Integration

The United States Air Force is an integrated force that relies on critical contributions from active-duty members, guardsmen, reservists, civilians, and contractors. Each brings unique and complementary characteristics to produce a strong and versatile team. The active component drawdown, in concert with a shortage of trained aircrews on active duty and the increase in operating tempo, has dramatically increased Air Force reliance on the Air National Guard and Reserve. For example, the Air National Guard is picking up the training mission at Kelly Air Force Base, Texas, and Springfield Air National Guard Base, Ohio, and the Reserve is picking up a key portion of the training mission at Luke Air Force Base, Arizona. In addition, the Reserve is conducting test support at Edwards Test Center, California, flight check functions at Air Force depots, and instructor duties at primary pilot training bases. We have also established reserve associate units alongside active F-16, Airborne Warning and Control System (AWACS), KC-135, and C-17 units. Associate units have no assigned aircraft and use active duty aircraft for training and mission accomplishment. In 1999, the Air National Guard and Reserve have been called upon to address a growing range of peacetime and contingency operations with their participation instrumental to success.

### Aerospace Integration

The Air Force is committed to further integrating its people and air and space capabilities into a fully capable aerospace force. This objective includes fielding a seamless, integrated aerospace force with the full range of capabilities to control and exploit the aerospace continuum. In FY 2000, the Air Force plans to release an Aerospace Integration Plan, which continues actions to further harmonize its people and systems. The Service's overarching objective is to master the application of aerospace power to support the nation's interests. As the Air Force modernizes both its air and space force structure and develops its aerospace leaders, it will continue to pursue opportunities to enhance its warfighting capabilities for the joint team and nation. The Air Force will make tradeoffs between air, space, and information capabilities to achieve desired effects that will produce the right results. In the long term, the Air Force will be prepared to conduct combat operations in, from, and through space should national policy so dictate.

# OUR ABILITY TO FIGHT AND WIN DEPENDS ON READINESS

To meet our mission to respond rapidly anywhere in the world on very short notice, the Air Force is expected to maintain a high state of readiness. People, training, equipment, logistics, and infrastructure combine to define and measure that readiness. As Air Force senior leaders have reported, the Service remains ready to meet today's demands, but the combination of several years of constant high operating tempo, aging equipment, and the cumulative effect of chronic underfunding threatens the Service's future readiness levels.

## *People*

The Air Force is the preeminent aerospace force in the world because of the high quality of its people. They truly ensure the success of the Service's operations worldwide. To remain the world's preeminent aerospace power, the Air Force must continue to recruit people who are capable and highly motivated, and it must retain people with the skills needed to employ our advanced technologies. However, a constant high deployment rate along with the strongest economy in a generation have made both retention and recruiting much more difficult.

To date, retention rates of our enlisted force are below our desired levels for the second year in a row. First-term retention in FY 1999 was 49 percent, well below the Air Force goal of 55 percent, and retention of career airmen was 91 percent, or 4 percent below the Air Force goal. While retention of second-term airmen has stabilized, at 69 percent, it still falls short of our preferred level of 75 percent. Retention in the officer corps is also challenging. In FY 1999, pilot retention was only 41 percent, down from 46 percent in FY 1998, while navigator retention remained at 62 percent. However, the FY 1999 long-term pilot bonus take rate, a forward-looking measure of pilot retention, rose to 42 percent, up 15 percentage points from FY 1998's long-term rate of 27 percent, and this permits a measure of guarded optimism. The authority to expand aviation continuation pay, recently provided by Congress in the FY 2000 National Defense Authorization Act, is a significant part of a multi-faceted approach designed to improve pilot retention in FY 2000 and beyond. Retention rates for mission support officers actually improved from 43 percent to 44 percent in FY 1999, while retention rates for non-rated operations officers dropped from 57 percent to 56 percent. Exit surveys indicate that the continued high operating tempo rate remains a leading cause for separations, but the ready availability of civilian jobs, dissatisfaction with pay and allowances, and difficulties with TRICARE are all contributory factors.

In 1999, the President, Congress, DoD, and Air Force have taken many aggressive steps to address these concerns. We implemented the EAF concept, restored the value of military retirements, increased pay and reformed the pay table, increased Aviation Continuation Pay, expanded the Selective Reenlistment Bonus program, and increased promotion rates for our noncommissioned officers (NCOs). All of these programs are expected to positively contribute to improving the Service's retention rates.

Lower than desired retention also had a direct impact on recruiting. The Air Force had to increase its recruiting goal for FY 1999 by 2,300, from 31,500 to 33,800. In 1999, the number of Air Force recruiters increased by a hundred and, for the first time ever, the Air Force used paid advertising. Nonetheless, the Air Force fell some 1,700 recruits short. Nevertheless, we continued to hold the line on the quality of our recruits. Over 99 percent of our accessions still have high-school diplomas and 76 percent score in the top half of the Armed Forces Qualification Test. To improve our recruiting posture, we are further increasing our recruiter manning, will continue paid TV advertising, will increase prior service accessions, and significantly increase the use of the initial enlistment bonuses.

Compounding manning problems is the increasing seniority of the civilian work force. Due to personnel drawdowns over the past 10 years, new hires have been extremely limited and many experienced employees have gone on to other jobs or taken early retirement. As a result, up to 80 percent of the Air Force workforce at many commands is eligible to retire in the next five years, and there are too few experienced workers to fill the shoes of those who leave. The Air Force is taking steps to reshape the civilian force to ensure that a properly sized pool of experienced personnel with current skills are available in the future to fill key positions. Our new accession strategies, such as investment in interns and other developmental trainee programs, force renewal programs, education and training, partnering with academia and industry, and better separation management, should help provide stability to the Air Force's long-term sustainment efforts.

In addition to retention and recruiting, we continue to leverage quality of life programs to retain a quality

force. In 1999, at Air Force urging, Temporary Lodging Entitlement was extended by Congress to enlisted personnel reporting to their first duty station, and for the first time ever, DoD implemented women, infant, and children benefits to families stationed overseas. The Service also accelerated the implementation of the Basic Allowance for Housing, continued work on the 1+1 dormitory standard, and developed the Family Housing Master Plan. With the high personnel tempo, family support is becoming ever important. As a result, steps are being taken to ensure TRICARE Prime enrollees have their own Primary Care Manager located on base with guaranteed access for acute, routine, and preventive appointments. Other programs such as childcare and youth centers, deployed spouse outreach programs, surviving spouse casualty support, and family readiness NCOs continue to demonstrate the Air Force's commitment to its members and their families.

## Training

Training a quality force is instrumental to our readiness. Several new programs are in place to hone the military skills required for expeditionary operations as an integrated aerospace force. The Aerospace Basic Course introduces new officers and select civilians to the concepts of expeditionary aerospace doctrine, Air Force core values, and strategic war planning. Warrior Week at Basic Military Training provides newly accessed airmen a week-long exercise at a bare base site.

The creation of the EAF will also allow the Air Force to structure training programs that peak immediately before the deployment vulnerability period. This improved scheduling process will allow units within the AEFs to focus training and deployment planning on current world events while improving readiness and reducing response times. The Air Force continues to train its aircrews and support personnel by participating in numerous joint/combined worldwide exercises both on the field and through simulation. Programs addressing specific needs of the force, like the Space Weapons School, Aerospace Operations Center, and the Defense Leadership and Management Program, are being continually updated.

## Equipment

Even with a highly trained quality force, equipment readiness levels will impact overall readiness. Engine readiness problems, an aging fleet, spot spares shortages, high operating tempo, and limited funding are driving overall readiness down. The Air Force has taken some significant steps to arrest these declines—for example improved engine funding, engine life management planning, better partnering with vendors, accelerated safety upgrades/modifications, and additional engine maintenance manning have contributed to steady readiness improvements in most of the Air Force engine fleet.

The age of the Air Force's weapons systems is unprecedented. In 1999, the average age of our aircraft is 20 years and under current modernization plans will increase to 30 years in 2015. The cost of maintaining this older equipment is growing. Fatigue, corrosion, and parts obsolescence are progressively driving up the costs of maintaining older planes and reducing overall equipment readiness. If the Air Force is to continue making readiness affordable, it must aggressively balance the cost of replacing weapons systems and continued modernization efforts.

The Air Force has taken some significant steps to arrest these declines—for example improved engine funding, engine life management planning, better partnering with vendors, accelerated safety upgrades/modifications, and additional engine maintenance manning have contributed to steady readiness improvements in most of the Air Force engine fleet.

During FY 1999, the Air Force addressed an accumulated shortfall in spares of $382 million and managed its depots to reduce backordered parts requisitions. These positive actions, combined with full funding for spares in FY 2000, may allow the Air Force to turn the corner on improving equipment readiness for the warfighter. However, the consolidation of Air Force depot work loads will continue to present major challenges to spare parts production.

The Air Force surged depot maintenance activities in the weeks prior to the Kosovo operation to ensure units deploying to the region had the resources they needed—when they needed them. With commencement of combat operations, depots further increased production through temporary duty recalls, additional shifts, weekend hours, and accelerated contractor and depot repair operations. The depots' extraordinary actions ensured support to units performing peacetime missions while satisfying operational requirements of the conflict. Depot efforts were complemented by extensive use of Worldwide Express to speed parts to the Kosovo theater. The Air Force surged depot maintenance operations through the end of FY 1999 to support reconstitution and recovery of the aerospace force.

## Infrastructure

In the past decade, reductions in Air Force manpower and force structure have outpaced those in infrastructure. As a result, the Service is spending scarce resources on redundant/unneeded facilities while struggling to maintain acceptable levels of readiness. To support unneeded facilities, the Air Force has been forced to underinvest in base operating support, real property maintenance, family housing, and military construction at critical operational bases. To reverse this negative readiness trend, the Air Force must be allowed to further reduce its base structure and reinvest the savings into readiness. A good example of the efficiency gained by reducing infrastructure is the Air Force's depot consolidation effort. By reducing the number of depots from five to three, the Air Force provides efficient and effective work loading of the three remaining depots; ensures a controlled, ready, and sustained source of depot maintenance; assigns workloads to depots that are the best sources of repair; and maximizes public private competitions. These competitions alone have resulted in cost avoidance of over $1.6 billion over the life of existing contracts while ensuring depot capacity is fully utilized.

## INNOVATIONS

### Science and Technology

The Air Force is committed to a strong science and technology program to help achieve the Air Force vision of an integrated aerospace force capable of rapid and decisive global engagement. By investing in a broad and balanced selection of technologies, the Air Force will be able to continue a successful legacy of superior technology development and transition more high payoff technologies into warfighting capabilities. The challenge now is to adapt to the faster pace of technology introduction, the widespread proliferation of high-tech products, and the challenges of affordability.

### Battlelabs

The Air Force continues to reap the benefits of six battlelabs created in 1997. The battlelabs rapidly develop superior ways to organize, train, equip, plan, command, and employ aerospace forces. The six battlelabs—Air Expeditionary Force, Space, Information Warfare, Force Protection, Unmanned Aerial Vehicles, and Command and Control—are small focused groups of operators developing high payoff concepts to support DoD's missions. Some early benefits of the labs include the Enhance Linked Virtual Informations System, Joint Surveillance Target Attack Radar System (JSTARS) Battlespace Imaging, Network Attack Visualization, Ground-Based Radar Site Protection, Expeditionary Operations Centers, and Space Surveillance Network Optical Augmentation. Each of these innovations brought a cost-effective capability to combatant commanders to enhance joint operations.

### Wargaming

The Air Force conducts two major wargames to explore new strategies and concepts, new capabilities, and new doctrine. Each wargame is held biannually on a rotating basis with the other. The first, Global Engagement, explores emerging aerospace concepts and alternative force structures set approximately 10-15 years into the future. The second, Aerospace Future Capabilities Wargame, evaluates strengths and weaknesses of future forces and operational concepts 20-25 years from now by comparing it against our Vision and Strategic Plan. The outputs from these wargames provide insights and suggest additional analyses that eventually feed into experiments, exercises, and the operational Air Force.

### Joint Expeditionary Force Experiment

The Joint Expeditionary Force Experiment (JEFX 99) was the second in a series of Air Force sponsored experiments, designed to explore new operational concepts and advanced technologies. JEFX 99 expanded on the command and control experimentation developed in JEFX 98 by enhancing the integration of space capabilities into the Integrated Command and Control System distributed architecture and incorporating coalition forces into the Air Operations Center. In EFX 00, we will emphasize Agile Combat Support, but will continue exploration in Expeditionary Operations, Information Operations, Common Operational Picture, and medical readiness.

## BETTER BUSINESS PRACTICES

### Defense Reform Initiative/Air Force Management Reform

The Defense Reform Initiative (DRI) aims to improve the way DoD works by reallocating resources from support areas to fighting forces. The ultimate goal is to balance the demands of meeting current requirements with

the imperative to invest for the future. The Air Force supports this Office of the Secretary of Defense program to push costs down and quality up. The Air Force has privatized 81 utility systems to date and is processing 450 additional candidates. Funding has been provided and work has begun on the feasibility of selling 238 of these systems. The Air Force is taking the same approach with housing. Since FY 1999, the Service has added eight projects for family housing privatization effecting 8,885 units. This privatization effort is a key tool in our overall housing revitalization program. Public/private manpower competitions continue to be a DRI success story. The Service fully executed its 1999 plan for announcement of OMB Circular A-76 studies, with additional studies programmed for the future. The Service conducted a top-to-bottom review of its manpower authorizations, with an eye toward identifying additional positions that can be subject to competition, yielding additional competitions candidates. This review will be completed annually with the next review pending. Competitive sourcing and privatization efforts yielded 35 percent manpower cost savings. This continues to be a promising initiative.

## Acquisition Reform

The Air Force continues to institutionalize areas of acquisition reform. These include concepts such as military specifications and standards reform, Cost As an Independent Variable, and Reduction of Total Ownership Cost. Since acquisition reform is a continuing process, we are pursuing and will continue to look for and pursue new areas where we can improve our ability to deliver weapons faster, better, and cheaper. Additional areas being addressed include the integration of the requirements and acquisition processes, cycle-time reduction initiatives, contractor incentive programs, evolutionary acquisition guidance, commercial services, streamlining the modification management process, and improvements in electronic commerce.

## Headquarters Air Force 2002

Headquarters Air Force (HAF) 2002 brings the HAF into the new millennium in a manner consistent with our vision. It will create a world-class military headquarters that is effective, efficient, and a great place to work. HAF 2002 is a response to the changing dynamics of our Expeditionary Aerospace Force, which necessitate a headquarters that is equally agile in providing the appropriate plans, policies, and resources that our forces need. Early initiatives have included reorganization of

information networks and support offices to permit electronic transmission of tasks and documents throughout the HAF, creation of a single Executive Secretariat to manage work flow, and reorganization of public affairs and legislative affairs to permit better coordination of information flowing to Congress, the media, and the public. HAF 2002 seeks to rethink and redesign processes to achieve dramatic performance improvements and to leverage the talents and improve the quality of life for all HAF members by cutting costs, eliminating redundancies, reducing non-value-added work, and creating the agility to better adapt to a constrained resource environment.

## Financial

The Air Force, as a prudent steward of public funds, is working diligently to comply with the Government Performance and Results Act (GPRA) and the Chief Financial Officers (CFO) Act. The Service has incorporated GPRA measures into its financial statements. The Air Force passed audit tests on some of the most important portions of its FY 1998 CFO financial statements, including disbursements and budgetary resources provided. The Service has instituted specific organizational and training changes aimed at improving internal controls to help prevent fraud and improve confidence in its financial performance. The Air Force also has an ongoing program to fix its financial systems, a key step in moving toward unqualified audit opinions on all its financial statements. As it improves its financial systems, the Service is focusing first on those improvements that help commanders make better decisions.

## ENTERING THE 21ST CENTURY

Time-phased modernization is critical to long-term readiness. The FY 2001 President's Budget provides funds to maintain our key modernization programs and enhance the EAF by investing in our core competencies. Modernization is guided by the Air Force's six core competencies—Aerospace Superiority, Rapid Global Mobility, Global Attack, Precision Engagement, Information Superiority, and Agile Combat Support.

## Aerospace Superiority

Aerospace Superiority—the ability to control the vertical dimension so that the joint force is both free from attack and free to maneuver and to attack—is the key to achieving full spectrum dominance. In the 21st century, air and space superiority will depend on the F-22 Raptor,

the Evolved Expendable Launch Vehicle (EELV), the Space-Based Infrared System (SBIRS), and the Airborne Laser (ABL).

The F-22 Raptor will dominate the aerial arena of the 21st century with its revolutionary combination of stealth, supercruise, maneuverability, and integrated avionics. In 1999, the F-22 continued envelope expansion testing, successfully demonstrated supercruise, and operated at high angle of attack post-stall flight with thrust vectoring. The F-22 will enter operational service in 2005.

The EELV will take America's spacelift capability to 2020 and beyond. New launch vehicles are being developed to replace current Titan, Atlas, and Delta launch vehicles. The first EELV commercial launch is scheduled for 2001, with the first government launch in 2002. This new commercial partnership launch strategy will meet military, civilian, and commercial spacelift requirements, at much reduced cost.

The SBIRS includes both a high and low component that will provide missile warning to national and theater commanders, improved capability to detect and track theater missile launches and cue missile defense systems, and contributions to the characterization of the theater battlespace and the technical intelligence missions.

The ABL is a key Air Force contributor to the nation's multi-layered theater missile defense architecture and is the DoD's only boost phased intercept system. In 1999, the Air Force successfully tested an improved version of its flight-weighed laser module, and successfully completed a suite of tests mandated by Congress. In January 2000, we accepted delivery of our first 747 aircraft for modification. ABL is well on its way to this year's critical design review.

### Rapid Global Mobility

Modernization of the Air Force's mobility assets is integral to the daily execution of our National Security Strategy (NSS). The Mobility Requirements Study FY 2005 (MRS-05), an update to the 1995 Mobility Requirements Study/Bottom-Up Review Update, will determine the mix of end-to-end mobility assets. Using MRS-05 data, Air Mobility Command's Oversize and Outsize Analysis of Alternatives will determine the most cost-effective strategic airlift fleet mix to achieve our National Military Strategy from various postures of

engagement. Additionally, the Tanker Requirements Study for FY 2005, baselined from MRS-05, will determine the number of tankers needed to carry out the NSS. Whether employing on-scene Air Expeditionary Forces or deploying contingency forces in response to a crisis, mobility assets make the difference—in speed and stamina. Our procurement of the full complement of required C-17s; aggressive C-5, C-130, and KC-135 modernization program; and global access, navigation, safety, and avionics upgrades to the entire mobility fleet will ensure Global Engagement well into the 21st century.

### Global Attack

Global Attack assets allow our nation to successfully conduct military operations across the spectrum of conflict. Global Attack programs include modernization of the B-1, B-2, and B-52. Coupled with precision-guided munitions, these platforms produce a potent force for deterrence of both nuclear and conventional conflict.

The B-2 can meet any global task, anytime, anywhere. The Air Force continues to improve the B-2's low-observable coatings and integrate advanced weapon systems to include the Joint Direct Attack Munition (JDAM) and Joint Standoff Weapon (JSOW). The B-1 and B-52 continue to provide firepower to the joint force. Upgrades to the B-1 include the capability to carry JDAM and improved defensive systems. Deployments in Operation Desert Fox and Allied Force show how potent these weapons are. The B-52H is now operationally capable of employing JDAM and communications and navigation system upgrades will keep it viable through 2040. In addition, the Air Force is replenishing its conventional air-launch cruise missile stocks to allow the B-52 to continue its important standoff role.

The F-15 Eagle and F-16 Falcon, the Air Force's legacy fighters, provide a potent mix of air-to-air and air-to-surface capability. Operation Allied Force reinforced the Air Force's need to ensure a viable fighter force structure until legacy systems are replaced. The A-10 adds capability to support ground forces in both the close air support and combat search and rescue roles. The F-117 Nighthawk plays a key role in precision employment as it penetrates dense threat environments and delivers precision weapons against high-value, highly-defended, and time-critical targets. The Air Force continues to modernize these weapon systems to improve capability, survivability, and sustainability in the 21st century.

The Joint Strike Fighter program will develop and field an affordable, highly-common family of next generation, strike fighter aircraft for the Air Force, Navy, Marine Corps, and our allies. Current program emphasis is on facilitating the evolution of fully validated and affordable joint operational requirements, demonstrating cost-leveraging technologies and concepts, and completing the Concept Demonstration Phase. First flights of the contractor demonstration aircraft are scheduled for the spring of 2000. The Engineering and Manufacturing Development phase will begin in FY 2001.

## Precision Engagement

As shown in Operation Allied Force, theater commanders must have the ability to precisely strike targets in adverse weather conditions while minimizing risk and collateral damage. The Air Force's new generation of guided weapons uses the Global Positioning System (GPS) coupled with Inertial Navigation System (INS) to precisely put bombs on targets, night or day, in all weather conditions. The Joint Air-to-Surface Standoff Missile (JASSM), JSOW, JDAM, and the Wind-Corrected Munitions Dispenser (WCMD) are among the Air Force's high-priority Precision Engagement programs.

JASSM is a highly accurate, stealthy, standoff missile which will enable the Air Force to destroy heavily defended, hard, fixed, and relocatable targets with virtual impunity. As a result of acquisition reform, JASSM was delivered at a quarter-of-the-cost and in half-the-time of similar missile programs. JASSM is currently undergoing flight tests during Engineering and Manufacturing Development and is scheduled to begin production deliveries in 2003.

JSOW is an accurate, adverse-weather, unpowered, glide munition. The Air Force will use it to deliver cluster munitions that seek and destroy armored and soft targets at ranges up to 40 nautical miles. The Air Force began taking delivery of JSOW in the last the quarter of 1999.

JDAM provides the Air Force the capability to deliver 1,000 and 2,000 pound, general-purpose, and penetrator warheads in adverse weather with precision accuracy. The Air Force will use JDAM to destroy high-priority, fixed, and relocatable targets from multiple platforms. The first operational use of JDAM was from a B-2 during the first night of Operation Allied Force.

WCMD is an INS-guided tail kit that enables the Air Force to accurately deliver dispenser weapons from medium to high altitudes. WCMD tail kit equipped weapons are expected to be available in late 2000.

## Information Superiority

The capability to collect, process, and disseminate an uninterrupted information flow, while exploiting or denying the adversary's ability to do the same, will be critical to success in future military operations. Our evolutionary modernization plan to support the Expeditionary Aerospace Force includes upgrades to many systems within the information superiority core competency.

The Aerospace Command and Control, Intelligence, Surveillance, and Reconnaissance Center (AC2ISRC) is the key Air Force organization to standardize $C^2$ and ISR systems across the joint and coalition arenas. AC2ISRC is working to rapidly identify, through Joint Experimentation, advanced capabilities to transition to the theater commanders that will enable them to get inside an adversary's operating cycle and use information against him.

The JSTARS and AWACS provide theater commanders real-time, wide area surveillance of enemy ground and air movements. Four JSTARS aircraft will be delivered in FY 2000. The AWACS fleet is projected to achieve Initial Operational Capability with the Radar System Improvement Program (RSIP) in June 2000. RSIP provides increased detection capability.

The Air Force's UAV programs (Predator and Global Hawk) are maturing rapidly to support ISR operations. The U-2 and RC-135 Rivet Joint continue to be the primary DoD aircraft for ISR data collection to support the joint forces commander. The Air Force is currently upgrading the U-2's defensive system capabilities and synthetic aperture radar to provide near real time targeting capability for precision guided munitions. The first reengined Rivet Joint is undergoing flight testing and will provide improved battlefield coverage as a result of higher altitude and longer loiter times.

GPS navigation information is being integrated into nearly all facets of the modern battlefield. The Air Force is fielding GPS navigation warfare upgrades that protect U.S. and allied forces' ability to operate GPS on the battlefield and prevent adversary forces from using it while at the same time avoiding disruption of civil GPS use.

Military satellite communications systems, notably the Defense Satellite Communications System and Milstar, continually support contingency and current operations. These systems place powerful communication tools in the hands of battlefield commanders worldwide, enabling information reachback to CONUS and continuity with the National Command Authority. Global Combat Support System (GCSS) is a Joint Chiefs of Staff-approved strategy for building and fielding combat support systems to provide Agile Combat Support. The long-term vision is that GCSS-AF will provide a vehicle to provide the user with a complete picture of the combat support environment.

The Air Force's Discoverer II partnership with the National Reconnaissance Office and Defense Advanced Research Projects Agency will develop and demonstrate space-based radar technology against time-critical moving ground targets in FY 2005. Discoverer II will demonstrate affordable satellite manufacturing which leverages off commercial processes, key enabling technologies for advanced radar payload, and operational benefit for the deep look, broad area coverage against an adversary's ground moving targets. The Discoverer II demonstration promises to provide information critical to future space-based radar objective system program decisions.

The Global Command and Control System (GCCS), a DoD flagship program, will be fielded at all of our bases, Major Commands, Numbered Air Forces, and Air Operations Centers. The Theater Battle Management Core System will become the GCCS system of record for Air Tasking Order development and dissemination. GCCS, together with the Secret Internet Protocol Router Network (SIPRNET), form the backbone of Air Force expeditionary command and control.

As we look at expanding expeditionary operations, the Service views the GCSS as a vital complement to GCCS. The Service formed an interim GCSS Requirements Integration Directorate to tie the full range of combat support system requirements (medical, logistics, finance, personnel, etc.), resources, and programs into a coherent, integrated effort. GCSS-AF will be our strategy to provide timely and responsive expeditionary combat support to operational commanders.
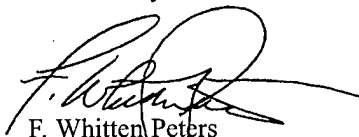
To ensure operational mission success, it is imperative that our information be trusted, timely, accurate, and in a form that is useful in our daily operations. The Air Force is protecting critical infrastructures in accordance with Presidential Decision Directive 63, continues to evolve our computer network defense capabilities, and is a full partner in the recently established Joint Task Force for Computer Network Defense. The Air Force continues to shore up our defenses through a well-funded and rigorous defense-in-depth program that will deliver the information and mission assurance vital to our expeditionary operations.

## Agile Combat Support

Agile Combat Support (ACS) utilizes the logistics and combat support communities to create, deploy, sustain, and protect personnel, assets, and capabilities across the spectrum of operations. Effective beddown support and sustainment allow deploying forces to downsize the amount of equipment to start-up and sustain base operations. This reduced deployment footprint lowers the need for prepositioned assets and airlift requirements. To meet these needs, the Air Force is revamping its logistics systems in many areas. Time-definite delivery provides users with reliable, predictable delivery of mission-critical parts and reduces inventory investments. Reachback provides ready access to rear or CONUS-based organizations for support, reducing the deployment footprint and saving associated costs. Log $C^2$ and other logistics decision support tools, leverage information technology, enhance ACS $C^2$, improve base support planning, and enhance tailoring deployment packages for specific locations and scenarios. Other leading edge technologies, such as Global Combat Support System and Survey Tool for Employment Planning, will continue to enhance ACS in the future.

## CONCLUSION

Our national security depends on aerospace power. It will be the dominant force in expeditionary operations in the 21st century. The United States Air Force is organized to win, prepared for the future, and committed to supporting our nation's security needs—anytime and anywhere.

F. Whitten Peters
Secretary of the Air Force

# REPORT OF THE CHAIRMAN OF THE RESERVE FORCES POLICY BOARD
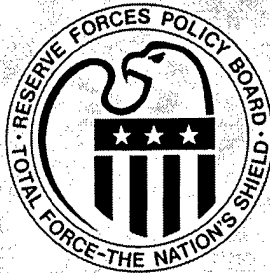
I am once again pleased to have this opportunity to present a brief summary of the Reserve Forces Policy Board's highlights, observations and recommendations, and outlook for the future. The Board's theme this year was Education – The Gateway to Integration. This theme was in keeping with the Board's work to assist the Secretary of Defense in eliminating all residual barriers—structural and cultural—to effective integration of the Reserve and Active components into a seamless Total Force. Education was identified as one of the most significant means to eliminate or, at least, mitigate those barriers. With the approval of the Secretary of Defense, an Education Summit was held which is discussed later on in this report.

The Board serves as the principal and independent policy advisor to the Secretary of Defense on matters relating to the Reserve components. The Board continues to be the resource of choice, providing efficient integration and effective utilization of Reserve components into the Total Force. Representatives from each of the Service secretariats, Joint Staff, Active components, and Reserve components serve as Board members. The Board provides timely, relevant, and credible advice and reporting to ensure that DoD decisions affecting the Reserve components enhance the capability of the Total Force to meet national security requirements. The Reserve component members represent a wide range of industrial, business, professional, and civic experience, in addition to their military expertise.

Many of the issues worked by the Board are discovered during field trips. One of the Board's most recent field trips was to the United States Pacific Command (USPACOM), as well as U.S. Marine Forces Pacific, U.S. Pacific Fleet, Pacific Air Forces, and U.S. Army Pacific, to include the 9th Regional Support Command and Hawaii National Guard. This trip completed the Board's visits to the Unified Combatant Commands begun in 1997. The purpose of this trip was to continue the information collection process with the Unified Combatant Commands and discuss any issues identified by USPACOM and the commanders of the component elements and their staffs which impeded the integration of their respective Reserve components. The issues raised in USPACOM validated the Board's findings in previous visits to other commanders in chief (CINCs).

## FIELD TRIP TO UNITED STATES PACIFIC COMMAND

In addition to Hawaiian congressional representatives welcoming us to their districts, the Board met with the United States Pacific Command Commander in Chief (USCINCPAC) who asked the Board to assist in carrying the word back to the Secretary of Defense and Hometown America concerning the mission and challenges America faces in the Pacific. He emphasized that Reserve component augmentation to USPACOM forces is crucial to the United States maintaining military and economic stability in the region. Following the meeting with USCINCPAC, three days of discussions were held with USCINCPAC's component commands. The issues and concerns raised by USCINCPAC and his component commands throughout the visit, which are presented in this report, are concurred with and endorsed by the Board.

## MAJOR ISSUES AND CONCERNS

### 179 Day Issue

During the Board's discussions with the Commander, Pacific Air Forces, he remarked that the missions conducted by the Active Air Force and the Air Guard and Air Force Reserve have become transparent within his command. He indicated though that there are times when his command would like to keep a highly qualified, productive individual on orders longer than 179 days. However, current legislation does not allow this to happen without the individual counting against Active component end strength. The USCINCPAC and the component commands concurred that the Board support the modification of Title 10 to exclude Reserve component tours in excess of 179 days from counting against Active component end strength. This change would ultimately allow all CINCs greater continuity in the use of Reserve component members and increase the accessibility to the Reserve components at negligible cost.

### Joint Professional Military Education

The USCINCPAC indicated to the Board that the assignment of Reserve component officers to joint commands is increasing. However, these individuals serve at a disadvantage from their Joint Professional Military Education (JPME) trained Active component counterparts because they lack the foundation of knowledge in joint operations. The Services currently do not program JPME for Reserve officers. Completion of JPME will better prepare Reserve component officers for joint duty. It was also stated that all full-time support officers should attend the Armed Forces Staff College prior to reporting for a joint duty assignment.

### Parity of Benefits and Treatment

The Deputy/Chief Staff Officer, Commander in Chief, U.S. Pacific Fleet, stated to the Board that some specialized Reservist skills are frequently needed within 24 to 48 hours—just like Active duty members. The Commander, Pacific Air Forces, stated that many skills (communicators, computer programmers, pilots) are sought as eagerly in the civilian market as they are in the military. Both individuals acknowledged that any disparity in benefits and treatment of Active and Reserve component members would impede Total Force integration—not just differences in pay and benefits, but the day-to-day differences in the treatment of Active and Reserve component members in the use of available morale, welfare, and recreation services and child care facilities. USPACOM and its components recommended that a review of benefits, entitlements, and treatment of Reserve component members be conducted to determine if any disparities exist in today's environment between the Active and Reserve components.

### Simplify Administration and Funding

USPACOM and its component commands indicated to the Board that the process to access Reserve component members is time consuming and varies from Service to Service. It was strongly recommended that the Board support standardizing terminology, pay and personnel systems, orders generation, and travel programs and adopt a single DoD-wide billet number scheme and consolidate funding categories. The command stated that access to Reserve components for peacetime/short-notice contingencies should be simplified.

### General/Flag Officer End Strength Relief

USPACOM, as well as all the previous CINCs visited by the Board, recommended that Title 10 be modified to permit Reserve component general and flag officers to serve in excess of 180 days without counting against Active component end strength. This relief would provide continuity in the use of senior Reserve component members to support CINC requirements and permit CINCs to utilize the experience and leadership of senior Reserve component members at a negligible cost.

## Commonality of Equipment

The Commander, Pacific Air Forces, remarked to the Board that the lack of commonality of equipment between the Active and Reserve components is a significant deterrent to operational integration between the two. He believes munitions and equipment should be the same for both the Active and Reserve components to improve operability.

## Observations

The CINCs, being at the pointed end of the spear, have a good understanding of the structural barriers that prevent seamless integration of the Active and Reserve components. They are ahead of us in understanding the issues that negatively affect their ability to access and utilize Reserve component members to conduct operations. The CINCs have to live with the impact of legislation, DoD policies, and Service policies on a day-to-day basis. The CINCs want and need the resources and flexibility that the Guard and Reserve offer to accomplish their mission. Their issues and concerns must be addressed. Most of the issues the Board received in USPACOM and their subordinate commands were the same as the recent policy and legislative initiatives discussed with the Deputy Secretary of Defense. The trip to USPACOM validated the issues previously identified.

## POLICY AND LEGISLATIVE INITIATIVES

As a result of the Board's visits to many of the CINCs over the past two years, as well as recent Total Force symposiums conducted at such prestigious institutions as National Defense University and the Harvard School of Government, the Board identified the top 20 CINC issues and symposium recommendations. Although all the issues need to be worked, the following three policy and three legislative initiatives recommended to the Secretary of Defense in January 1999 are the ones that would have an immediate positive impact upon Total Force if initiated:

### Policy Initiatives

- Direct an educational summit to address the feasibility of redesigning commissioning and Professional Military Education (PME) programs from a more Total Force perspective and review the potential of extending a form of PME to Reserve components.

- Direct the Office of the Assistant Secretary of Defense for Reserve Affairs to conduct a Treatment and Military Benefits Review to determine if disparities between the Active and Reserve components are appropriate in today's environment.

- Request each Service conduct a Total Force review on utilizing innovative applications of technology to optimize opportunities for skills training while reducing non-mission related training.

### Legislative Initiatives

- Support the authorization of, and exemption for, Reserve Chiefs and National Guard Directors to become 0-9 billets.

- Support legislative action to give the Secretary of Defense the ability to call to active duty certain Guardsmen and Reservists with special skills which may be required in the early development of a domestic or national emergency prior to a Presidential Reserve Call-up.

- Support legislative action to encourage an integrated military by providing relief of active duty end strength accountability when Reserve component members are called to active duty.

## EDUCATION SUMMIT

The most visible of all the policy initiatives approved by the Secretary of Defense was tasking the Reserve Forces Policy Board to host an Education Summit and report its findings. In the Secretary of Defense memorandum dated January 11, 1999, he states: "Creating a truly seamless Total Force requires an educational process that begins upon entering military service and continues throughout one's career. The aim of this summit is to devise better means to inculcate through our educational systems an awareness among Active and Reserve service members of the imperative that we operate as a Total Force."

Hence, from May 5-7, 1999, in coordination with the Army War College in Carlisle, Pennsylvania, the summit was held. The summit brought together the key leadership from the Services' education organizations and the Reserve components. Work at the summit centered on the vision of a DoD professional military and education system that would develop a positive attitude and build a strong foundation for a Total Force team in which future leaders at all levels view Active, Guard, Reserve, and civilians as integral partners. Results of the summit included a shared vision, principles, and

policy elements for Total Force education. Other recommendations were also made regarding course content, methods of instruction, and a strategy for implementation. Finally, it was determined that an effective, dynamic, and diverse organization will exhibit a culture that emphasizes inclusiveness for the common good and institutionalizes the process of increasing strengths and capabilities whenever possible, often building upon differences found within components of that organization. The work of the Board has shown that good progress has been made toward realization of the Total Force.

A dynamic educational system constantly evolves as new ways of looking at the world we live in bring changes in both philosophy and technology. Since the end of the Cold War, our military strategy has changed with greater reliance on, and integration of, the Reserve components. These new realities have created an opportunity to review the DoD professional education system. We must ensure all military members have access to the professional military education they need throughout their careers.

However, in many basic and crucial areas, there is much to do before the U.S. military and its civilian component attain the vision of true unity and mutual understanding in fulfillment of national defense needs and the indispensable role of the Reserve components.

## WORKING ISSUES

The CINCs and others have come to depend on the Board to pick up, research, staff, and work Total Force issues. The Board contemplated, but decided against, changing their name from the Reserve Forces Policy Board to the Total Force Policy Board. This is because the line separating Active and the Reserve component issues is slowly disappearing. Some of the many issues the Board is working or monitoring, in cooperation with other DoD offices and agencies, are military funeral honors, smart ID card, medical care for families, disability severance pay, recruiting and retention, Defense Reform Initiative Directive #20 (DRID), and determining if the Reserve component chiefs and directors should be 0-9 billets. DRID 20 was put forward which could have the effect of replacing Combat Support (CS) and Combat Service Support (CSS) soldiers with contract civilians. Having recently transformed Guard combat units to CS/CSS units, the Board is concerned with the proposal that these CS/CSS units now be replaced with contract civilians. DRID 20 recommendation puts extreme stress on the integration process. The Board is working to ensure that personnel with operational Guard and Reserve experience are consulted on the effects of DRID 20 prior to any decisions being made.
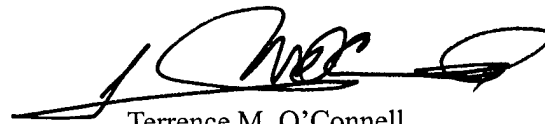
The Board recommends periodically reviewing the who, what, when, where, and why of the Reserve components. The Board favors reviewing the evolving Service component role process to remind ourselves of the basic philosophies that continue to be the basis of our attitude and culture. For example, are the Reserve components used as Congress and its citizens expect them to be utilized? How many times will a Guardsmen or Reservist be willing to be called up; yet on the other hand, how many times would an Active component member be expected to go to war in a 20 year career? These and other issues are constantly being discussed by the Board.

## BEYOND 2000

This one of a kind Board was created during President Harry S. Truman's Administration over 50 years ago. During the first 50 years of the Board, we have seen its membership increase from six Service Secretaries to 24 Active duty and Reserve component general/flag officers and Assistant Service Secretaries. Additionally, the Board has been the principal advisor to the Secretary of Defense on matters affecting the Reserve components. The Board looks with great satisfaction to many ongoing program and policies that are based upon recommendations formulated by the Board. The Board has played a major role and takes great pride in the development of policy for our Reserve components. It stands ready to assist the Secretary and the Department in meeting the challenges of the new millennium.

The Reserve Forces Policy Board's annual report, entitled Reserve Component Programs, Fiscal Year 1999, is scheduled for publication in March 2000. This report not only provides detailed information regarding Reserve component programs and issues, but also has become one of the premier publications on the Reserve components.

Terrence M. O'Connell
Chairman

## Department of Defense

**Chart A-1**

**Date: February 2000**

### Secretary of Defense / Deputy Secretary of Defense

**Office of the Secretary of Defense**
- Under Secretaries
- Assistant Secretaries of Defense and Equivalents

**Inspector General**

**Joint Chiefs of Staff**
- Chairman JCS
- The Joint Staff
  - Vice Chairman, JCS
  - Chief of Staff, Army
  - Chief of Naval Operations
  - Chief of Staff, Air Force
  - Commandant, Marine Corps

**Unified Combatant Commands**
- Central Command
- European Command
- Joint Forces Command
- Pacific Command
- Southern Command
- Space Command
- Special Operations Command
- Strategic Command
- Transportation Command

### Department of the Army
**Secretary of the Army**
- Under Secretary and Assistant Secretaries of the Army
- Chief of Staff Army
- Army Major Commands & Agencies

### Department of the Navy
**Secretary of the Navy**
- Under Secretary and Assistant Secretaries of the Navy
- Chief of Naval Operations
  - Navy Major Commands & Agencies
- Commandant of Marine Corps
  - Marine Corps Major Commands & Agencies

### Department of the Air Force
**Secretary of the Air Force**
- Under Secretary and Assistant Secretaries of the Air Force
- Chief of Staff Air Force
- Air Force Major Commands & Agencies

### Defense Agencies
- Defense Advanced Research Projects Agency
- Ballistic Missile Defense Organization
- Defense Commissary Agency
- Defense Contract Audit Agency
- Defense Finance and Accounting Service
- Defense Information Systems Agency
- Defense Intelligence Agency
- Defense Legal Services Agency
- Defense Logistics Agency
- Defense Security Cooperation Agency
- Defense Security Service
- Defense Threat Reduction Agency
- National Imagery and Mapping Agency
- National Security Agency/Central Security Service

### DoD Field Activities
- American Forces Information Service
- Defense POW/MP Office
- DoD Education Activity
- DoD Human Resources Activity
- Office of Economic Adjustment
- TRICARE Management Activity
- Washington Headquarters Services

Chart A-2

**Office of the Secretary of Defense**

Secretary of Defense
Deputy Secretary of Defense

- ATSD (Civil Support)
- Inspector General
- ATSD (Intelligence Oversight)
- General Counsel
- ASD (Legislative Affairs)
- ASD (Public Affairs)
- Director Administration and Management

USD (Policy)
PDUSD (Policy)
- ASD (Special Operations/Low-Intensity Conflict)
  - ASD (International Security Affairs)
- DUSD (Policy Support)
  - ASD (Strategy and Threat Reduction)

USD (Comptroller)
- PDUSD (Comptroller)
- Director Program Analysis & Evaluation

USD (Personnel & Readiness)
- ASD (Force Management Policy)
- ASD (Reserve Affairs)
- ASD (Health Affairs)
- DUSD (Planning)
- DUSD (Program Integration)
- DUSD (Readiness)

ASD (Command, Control, Communications & Intelligence)

Director Operational Test & Evaluation

USD (Acquisition, Technology & Logistics)
PDUSD (AT&L)
- Director Defense Research & Engineering
  - ATSD (Nuclear & Chemical & Biological Defense Programs)
  - DUSD (Science & Technology)
  - DUSD (Advanced Systems & Concepts)
- DUSD (Logistics & Materiel Readiness)
- DUSD (Industrial Affairs)
- DUSD (Environmental Security)
- DUSD (Acquisition & Technology)
- DUSD (Installations)
- DUSD (Acquisition Reform)
- Dir Small & Disadvantaged Business Utilization

Date: February 2000

# Joint Chiefs of Staff

Chart A-3

Date: May 1996

**Secretary of Defense**

**Deputy Secretary of Defense**

Chairman, Joint Chiefs of Staff

Vice Chairman, Joint Chiefs of Staff

Chief of Staff, Army
Chief of Naval Operations
Chief of Staff, Air Force
Commandant, Marine Corps

Director, Joint Staff

**J-1** Manpower and Personnel

**J-2** Intelligence (DIA)

**J-3** Operations

**J-4** Logistics

**J-5** Strategic Plans & Policy

**J-6** Command, Control, Communications & Computer Systems

**J-7** Operational Plans & Interoperability

**J-8** Force Structure, Resources & Assessment

## Unified Combatant Commands

Chart A-4

Date: October 1999

**Secretary of Defense**
**Deputy Secretary of Defense**

- Central Command
- European Command
- Pacific Command
- Joint Forces Command
- Southern Command
- Special Operations Command
- Strategic Command
- Space Command
- Transportation Command

**Chart A-5**

**Military Departments**

**Date: July 1999**

Secretary of Defense / Deputy Secretary of Defense

Secretary of the Navy / Under Secretary of the Navy

- Assistant Secretary Research, Development & Acquisition
- Assistant Secretary Financial Management & Comptroller
- Commandant of the Marine Corps
- Operating Commands & Agencies
- Assistant Secretary Manpower & Reserve Affairs
- Assistant Secretary Installations & Environment
- Chief of Naval Operations
- Operating Commands & Agencies

Secretary of the Air Force / Under Secretary of the Air Force

- Assistant Secretary Manpower, Reserve Affairs, Installations & Environment
- Assistant Secretary Financial Management & Comptroller
- Air Force Chief of Staff
- Operating Commands & Agencies
- Assistant Secretary Acquisition
- Assistant Secretary Space

Secretary of the Army / Under Secretary of the Army

- Assistant Secretary Financial Management & Comptroller
- Assistant Secretary Installations & Environment
- Army Chief of Staff
- Operating Commands & Agencies
- Assistant Secretary Acquisition, Logistics & Technology
- Assistant Secretary Civil Works
- Assistant Secretary Manpower & Reserve Affairs

**Chart A-6**

**DoD Field Activities**

Date: January 2000

| Secretary of Defense |
| --- |
| Deputy Secretary of Defense |

- USD (Acquisition, Technology and Logistics)
  - DUSD (Installations)
    - Office of Economic Adjustment
- ASD (Public Affairs)
  - American Forces Information Service
- USD (Personnel and Readiness)
  - ASD (Health Affairs)
    - TRICARE Management Activity
  - ASD (Force Management Policy)
    - Department of Defense Education Activity
    - DoD Human Resources Activity
- Director Administration and Management
  - Washington Headquarters Services
- USD (Policy)
  - ASD (International Security Affairs)
    - Defense POW/MP Office

## Defense Agencies

Chart A-7

Date: February 2000

**Secretary of Defense**

**Deputy Secretary of Defense**

- USD (Policy)
  - ASD (International Security Affairs)
    - Defense Security Cooperation Agency

- USD (Comptroller)
  - Defense Contract Audit Agency
  - Defense Finance & Accounting Service

- USD (Personnel and Readiness)
  - ASD (Force Management Policy)
    - Defense Commissary Agency

- General Counsel
  - Defense Legal Services Agency

- USD (Acquisition, Technology & Logistics)
  - DUSD (Logistics & Materiel Readiness)
    - *Defense Logistics Agency
  - Ballistic Missile Defense Organization
  - Director Defense Research & Engineering
    - Defense Advanced Research Projects Agency
    - *Defense Threat Reduction Agency

- ASD (Command, Control, Communications, & Intelligence)
  - *Defense Intelligence Agency
  - Defense Security Service
  - *Defense Information Systems Agency
  - *National Imagery and Mapping Agency
  - *National Security Agency

*Combat Support Agency

## BUDGET TABLES

## DEPARTMENT OF DEFENSE – BUDGET AUTHORITY BY APPROPRIATION[a,b,c] (DOLLARS IN MILLIONS)                    Table B-1

| | FY 1985 | FY 1990 | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 | FY 2001 |
|---|---|---|---|---|---|---|---|---|
| **Current Dollars** | | | | | | | | |
| Military Personnel | 67,773 | 78,876 | 69,775 | 70,338 | 69,821 | 70,650 | 73,690 | 75,802 |
| O&M | 77,803 | 88,309 | 93,658 | 92,353 | 97,215 | 104,992 | 104,856 | 109,286 |
| Procurement | 96,842 | 81,376 | 42,420 | 42,932 | 44,772 | 50,920 | 54,208 | 60,270 |
| RDT&E | 31,327 | 36,459 | 34,972 | 36,404 | 37,089 | 38,290 | 38,356 | 37,862 |
| Military Construction | 5,517 | 5,130 | 6,893 | 5,718 | 5,466 | 5,405 | 4,793 | 4,549 |
| Family Housing | 2,890 | 3,143 | 4,260 | 4,131 | 3,828 | 3,592 | 3,597 | 3,485 |
| Defense-wide Contingency | 9 | | | | | | | |
| Revolving & Management Funds | 5,088 | 566 | 3,061 | 7,534 | 2,591 | 5,381 | 1,650 | 1,154 |
| Trust & Receipts | -426 | -832 | -331 | -1,250 | -2,115 | -694 | -1,119 | -1,266 |
| Deduct, Intragovernment Receipt | -21 | -27 | -291 | -186 | -130 | -133 | -118 | -55 |
| **Total, Current $** | **286,802** | **292,999** | **254,417** | **257,974** | **258,537** | **278,402** | **279,913** | **291,087** |
| **Constant FY 2001 Dollars** | | | | | | | | |
| Military Personnel | 111,509 | 111,882 | 81,932 | 80,254 | 77,215 | 75,848 | 76,068 | 75,802 |
| O&M | 121,820 | 118,318 | 105,286 | 101,677 | 104,369 | 110,715 | 108,716 | 109,286 |
| Procurement | 138,146 | 97,729 | 45,176 | 45,203 | 46,707 | 52,470 | 55,074 | 60,270 |
| RDT&E[d] | 45,904 | 44,867 | 37,464 | 38,428 | 38,733 | 39,563 | 39,024 | 37,862 |
| Military Construction | 8,068 | 6,238 | 7,387 | 6,063 | 5,737 | 5,596 | 4,879 | 4,549 |
| Family Housing | 4,166 | 3,861 | 4.534 | 4,339 | 3,983 | 3,699 | 3,662 | 3,485 |
| Defense-wide Contingency | 13 | | | | | | | |
| Revolving & Management Funds | 7,415 | 699 | 3,355 | 7,945 | 2,759 | 5,518 | 1,675 | 1,154 |
| Trust & Receipts | -621 | -1,028 | -351 | -1,301 | -2,185 | -711 | -1,135 | -1,266 |
| Deduct, Intragovernment Receipt | -30 | -33 | -308 | -193 | -134 | -137 | -120 | -55 |
| **Total, Constant $** | **436,390** | **382,533** | **284,475** | **282,416** | **277,184** | **292,562** | **287,843** | **291,087** |
| **% Real Growth** | | | | | | | | |
| Military Personnel | 26.5 | -1.0 | -4.7 | -2.1 | -3.8 | -1.8 | 0.3 | -0.4 |
| O&M | 7.1 | -1.0 | -2.4 | -3.4 | 2.6 | 6.1 | -1.8 | 0.5 |
| Procurement | 9.1 | -1.0 | -4.1 | 0.1 | 3.3 | 12.3 | 5.0 | 9.4 |
| RDT&E[d] | 13.0 | -6.5 | -0.6 | 2.6 | 0.8 | 2.1 | -1.4 | -3.0 |
| Military Construction | 18.2 | -13.8 | 24.8 | -17.9 | -5.4 | -2.5 | -12.8 | -6.8 |
| Family Housing | 5.2 | -7.4 | 23.2 | -4.3 | -8.2 | -7.1 | -1.0 | -4.9 |
| **Total** | **6.3** | **-2.1** | **-2.6** | **-0.7** | **-1.9** | **5.5** | **-1.6** | **1.1** |

[a] Numbers may not add to total due to rounding.

[b] Tables B-1 and B-2 show the total DoD budget, which consists of both discretionary spending and direct spending. These terms were defined by the Balanced Budget and Emergency Deficit Control Act of 1985 (commonly known as the Gramm-Rudman-Hollings Act), which was extended and amended extensively by the Budget Enforcement Act of 1990 and the Omnibus Budget Reconciliation Act of 1993. Discretionary spending is controlled through annual appropriations acts. Direct spending (sometimes called mandatory spending) occurs as a result of permanent laws. For DoD, mandatory spending consists of offsetting receipts, totaling nearly $1.3 billion in FY 1999. The 1997 Balanced Budget Act included dollar limits (caps) on discretionary spending by the federal government.

[c] Extensive budget data is available on the DoD Web site—http://www.dtic.mil/comptroller Click on Defense Budget, then National Defense Budget Estimates (Green Book). Future year projections and other data are available in the President's *Budget of the United States Government* for each budget year. This annual multi-volume text also is at http://www.gpo.gov/usbudget/; select the latest budget year, then Historical Tables. In the Historical Tables volume, select Table 3.1 for defense's share of national data, Table 3.2 for outlays by appropriations title, and Table 5.1 for budget authority by title.

[d] RDT&E = Research, Development, Test, and Evaluation

## DEPARTMENT OF DEFENSE – BUDGET AUTHORITY BY COMPONENT[a,b] (DOLLARS IN MILLIONS)

Table B-2

| | FY 1985 | FY 1990 | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 | FY 2001 |
|---|---|---|---|---|---|---|---|---|
| **Current Dollars** | | | | | | | | |
| Army | 74,270 | 78,479 | 64,505 | 64,418 | 64,045 | 68,367 | 69,527 | 70,569 |
| Navy | 99,015 | 99,977 | 79,966 | 79,531 | 80,650 | 83,835 | 87,246 | 91,688 |
| Air Force | 99,420 | 92,890 | 72,992 | 73,216 | 76,284 | 81,914 | 81,207 | 85,298 |
| Defense Agencies/OSD/JCS | 13,126 | 18,663 | 22,269 | 22,444 | 23,389 | 24,450 | 24,405 | 25,297 |
| Defense-wide | 970 | 2,989 | 14,686 | 18,366 | 14,169 | 19,836 | 17,527 | 18,234 |
| **Total, Current $** | 286,802 | 292,999 | 254,417 | 257,974 | 258,537 | 278,402 | 279,913 | 291,087 |
| **Constant FY 2001 Dollars** | | | | | | | | |
| Army | 116,028 | 104,469 | 73,195 | 71,500 | 69,435 | 72,229 | 71,471 | 70,569 |
| Navy | 149,975 | 130,061 | 89,348 | 87,196 | 86,476 | 88,374 | 89,861 | 91,688 |
| Air Force | 148,653 | 120,608 | 81,716 | 80,169 | 81,616 | 86,036 | 83,754 | 85,298 |
| Defense Agencies/OSD/JCS | 20,342 | 23,788 | 24,280 | 24,072 | 24,733 | 25,445 | 24,914 | 25,297 |
| Defense-wide | 1,391 | 3,607 | 15,936 | 19,479 | 14,923 | 20,478 | 17,843 | 18,234 |
| **Total, Constant $** | 436,390 | 382,533 | 284,475 | 282,416 | 277,184 | 292,562 | 287,843 | 291,087 |
| **% Real Growth** | | | | | | | | |
| Army | 13.2 | –2.2 | -0.5 | -2.3 | -2.9 | 4.0 | –1.1 | –1.3 |
| Navy | 16.0 | –0.6 | 1.7 | -2.4 | -0.8 | 2.2 | 1.7 | 2.0 |
| Air Force | 11.5 | –4.5 | -3.4 | -1.9 | 1.8 | 5.4 | –2.7 | 1.8 |
| Defense Agencies/OSD/JCS | 17.6 | –1.1 | 3.3 | -0.9 | 2.7 | 2.9 | –2.1 | 1.5 |
| Defense-wide | –95.1 | 28.9 | -29.1 | 22.2 | -23.4 | 37.2 | -12.9 | 2.2 |
| **Total** | 6.3 | –2.1 | -2.6 | -0.7 | -1.9 | 5.5 | -1.6 | 1.1 |

[a] Number may not add to total due to rounding. Entries for the three military departments include Retired Pay accrual.

[b] Extensive budget data is available on the DoD Web site—www.dtic.mil/comptroller Click on Defense Budget, then National Defense Budget Estimates (Green Book). Future year projections and other data are available in the President's *Budget of the United States Government* for each budget year. This annual multi-volume text also is at http://www.gpo.gov/usbudget/; select the latest budget year, then Historical Tables. In the Historical Tables volume, select Table 3.1 for defense's share of national data, Table 3.2 for outlays by appropriations title, and Table 5.1 for budget authority by title.

## PERSONNEL TABLES

## MILITARY AND CIVILIAN PERSONNEL STRENGTH[a,b] (END FISCAL YEAR – IN THOUSANDS)

Table C-1

| | FY 89 | FY 90 | FY 91 | FY 92 | FY 93 | FY 94 | FY 95 | FY 96 | FY 97 | FY98 | FY99 | FY00 | FY01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Active Component** | | | | | | | | | | | | | |
| Army | 769.7 | 750.6 | 725.4 | 611.3 | 572.4 | 541.3 | 508.6 | 491.1 | 491.7 | 483.9 | 479.4 | 480.0 | 480.0 |
| Navy | 592.7 | 582.9 | 571.3 | 541.9 | 510.0 | 468.7 | 434.6 | 416.7 | 395.6 | 382.3 | 373.0 | 371.8 | 371.3 |
| Marine Corps | 197.0 | 196.7 | 195.0 | 184.6 | 178.4 | 174.2 | 174.6 | 174.9 | 173.9 | 173.1 | 172.6 | 172.1 | 172.0 |
| Air Force | 570.9 | 539.3 | 510.9 | 470.3 | 444.4 | 426.3 | 400.4 | 389.0 | 377.4 | 367.5 | 360.6 | 360.9 | 354.4 |
| **Total** | **2130.2** | **2069.4** | **2002.6** | **1808.1** | **1705.1** | **1610.5** | **1518.2** | **1471.7** | **1438.6** | **1406.8** | **1385.7** | **1384.8** | **1377.7** |
| **Reserve Component Military (Selected Reserve)** | | | | | | | | | | | | | |
| ARNG | 457.0 | 437.0 | 441.3 | 426.5 | 409.9 | 369.9 | 374.9 | 370.0 | 370.0 | 362.4 | 357.5 | 350.0 | 350.0 |
| Army Reserve | 319.2 | 299.1 | 299.9 | 302.9 | 275.9 | 259.9 | 241.3 | 226.2 | 212.9 | 205.0 | 205.2 | 205.0 | 205.0 |
| Naval Reserve | 151.5 | 149.4 | 150.5 | 142.3 | 132.4 | 107.6 | 100.6 | 98.0 | 95.3 | 93.2 | 89.0 | 90.3 | 89.6 |
| USMC Reserve | 43.6 | 44.5 | 44.0 | 42.3 | 41.7 | 40.7 | 40.9 | 42.1 | 42.0 | 40.8 | 40.0 | 39.6 | 39.5 |
| ANG | 116.1 | 117.0 | 117.6 | 119.1 | 117.2 | 113.6 | 109.8 | 110.5 | 110.0 | 108.1 | 105.7 | 106.6 | 160.7 |
| Air Force Reserve | 83.2 | 83.8 | 84.5 | 81.9 | 80.6 | 79.6 | 78.3 | 73.7 | 72.0 | 72.0 | 71.7 | 73.7 | 73.9 |
| **Total** | **1170.6** | **1130.8**[b] | **1137.8**[c] | **1114.9** | **1057.7** | **9971.3** | **945.8** | **920.4** | **902.2** | **881.5** | **869.1** | **865.2** | **864.7** |
| **Civilian**[d] | | | | | | | | | | | | | |
| Army | 401.5 | 398.4 | 369.6 | 364.5 | 327.3 | 289.5 | 272.7 | 258.6 | 246.7 | 232.5 | 224.9 | 219.9 | 216.4 |
| Navy/USMC | 350.2 | 349.0 | 331.8 | 319.5 | 295.0 | 276.5 | 259.3 | 239.9 | 222.6 | 207.6 | 200.8 | 199.5 | 192.2 |
| Air Force | 258.6 | 255.4 | 235.0 | 215.0 | 208.2 | 196.6 | 188.9 | 182.6 | 180.0 | 172.8 | 165.7 | 162.6 | 161.6 |
| DoD Agencies | 97.1 | 99.6 | 112.4 | 139.4 | 153.6 | 154.0 | 144.3 | 137.6 | 136.5 | 118.0 | 112.5 | 118.4 | 114.3 |
| **Total** | **1107.4** | **1102.4** | **1048.7**[e] | **1038.4** | **984.1** | **916.5** | **865.2** | **818.7** | **785.8** | **730.9** | **704.0** | **700.2** | **684.5** |

[a] As of September 30, 1999.

[b] Numbers may not add to totals due to rounding.

[c] Does not include 25,600 members of the Selected Reserve who were activated for Operation Desert Shield, displayed in the FY 1990 active strength total and paid for from the Active Military Personnel Appropriations account.

[d] Includes direct and indirect hire civilian full-time equivalents.

[e] Does not include 17,059 members of the Selected Reserve who were activated for Operation Desert Shield/Storm, displayed in the FY 1991 active strength total and paid for from the Active Military Personnel Appropriations account.

| U.S. MILITARY PERSONNEL IN FOREIGN AREAS<br>(END FISCAL YEAR — IN THOUSANDS)[a,b] | | | | | | | | | | | | Table C-2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FY 88 | FY 89 | FY 90 | FY 91 | FY 92[b] | FY 93 | FY 94[d] | FY 95 | FY 96 | FY 97 | FY 98 | FY 99 |
| Germany | 249 | 249 | 228 | 203 | 134 | 105 | 88 | 73 | 49 | 60 | 70 | 66 |
| Other Europe | 74 | 71 | 64 | 62 | 54 | 44 | 41 | 37 | 62[e] | 48 | 42 | 40 |
| Europe, Afloat | 33 | 21 | 18 | 20 | 17 | 17 | 9 | 8 | 4 | 3 | 4 | 4 |
| South Korea | 46 | 44 | 41 | 40 | 36 | 35 | 37 | 36 | 37 | 36 | 37 | 36 |
| Japan | 50 | 50 | 47 | 45 | 46 | 46 | 45 | 39 | 43 | 41 | 40 | 40 |
| Other Pacific | 17 | 16 | 15 | 9 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Pacific Afloat (including Southeast Asia) | 28 | 25 | 16 | 11 | 13 | 17 | 15 | 13 | 15 | 14 | 18 | 21 |
| Latin America/ Caribbean | 15 | 21 | 20 | 19 | 18 | 18 | 36[d] | 17 | 12 | 8 | 11 | 8 |
| Miscellaneous | 29 | 13 | 160 | 39[c] | 23 | 25 | 15 | 14 | 17 | 15 | 37 | 32 |
| Total[c] | 541 | 510 | 609 | 448 | 344 | 308 | 287 | 238 | 240 | 226 | 260 | 247 |

[a] As of September 30, 1999.

[b] Numbers may not add to totals due to rounding.

[c] Includes 118,000 shore-based and 39,000 afloat in support of Operation Desert Storm.

[d] Includes 17,500 in Haiti and 4,000 afloat in the Western Hemisphere.

[e] Includes 26,000 in the former Republic of Yugoslavia and Hungary in support of operations in Bosnia and Herzegovina.

## FORCE STRUCTURE TABLES

## DEPARTMENT OF DEFENSE STRATEGIC FORCES HIGHLIGHTS[a]

Table D-1

| | FY 1994 | FY 1995 | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 | FY 2001 | FY 2002 |
|---|---|---|---|---|---|---|---|---|---|
| **Land-Based ICBMs[b]** | | | | | | | | | |
| Minuteman II (1 warhead each) plus Minuteman III (up to 3 warheads each) | 625 | 535 | 530 | 530 | 500 | 500 | 500 | 500 | 500 |
| Peacekeeper (10 warheads each) | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| **Heavy Bombers (PAI)[c]** | | | | | | | | | |
| B-52 | 64 | 74 | 56 | 56 | 56 | 56 | 56 | 56 | 56 |
| B-1[d] | 84 | 60 | 60 | 60 | 70 | 74 | 80 | 82 | 82 |
| B-2 | 3 | 6 | 9 | 10 | 12 | 13 | 16 | 16 | 16 |
| **Submarine-Launched Ballistic Missiles[b]** | | | | | | | | | |
| Poseidon (C-3) and Trident (C-4) missiles on pre-Ohio-class submarines | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trident (C-4 and D-5) missiles on Ohio-class submarines | 336 | 360 | 384 | 408 | 432 | 432 | 432 | 432 | 432 |

NOTE: PAI = primary aircraft inventory.

[a] Force levels shown are for the ends of the fiscal years in question. Inventory levels for future years reflect the force structures supported by the FY 2000 budget. Actual force levels for FY 2001 and FY 2002 will depend on future decisions.

[b] Number of operational missiles not in maintenance or overhaul status.

[c] Excludes backup and attrition reserve aircraft as well as aircraft in depot maintenance. Total inventory counts will be higher than the PAI figures given here.

[d] B-1 bombers are accountable under START I but will not be accountable under START II.

## DEPARTMENT OF DEFENSE
## GENERAL PURPOSE FORCES HIGHLIGHTS
Table D-2

| | FY 1994 | FY 1995 | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 | FY 2001 | FY 2002 |
|---|---|---|---|---|---|---|---|---|---|
| **Land Forces** | | | | | | | | | |
| **Army Divisions** | | | | | | | | | |
| Active | 12 | 12 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Reserve | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| **Marine Corps Divisions** | | | | | | | | | |
| Active | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Reserve | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Army Separate Brigades[a]** | | | | | | | | | |
| Active | 7 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Reserve | 24 | 24 | 22 | 18 | 18 | 18 | 18 | 18 | 18 |
| **Tactical Air Forces (PMAI/Squadron)[b]** | | | | | | | | | |
| **Air Force Fighter and Attack Aircraft[c]** | | | | | | | | | |
| Active | 966/53 | 936/53 | 936/52 | 936/52 | 936/52 | 936/49 | 936/47[d] | 906/45 | 906/45 |
| Reserve | 639/40 | 576/38 | 504/40 | 504/40 | 504/40 | 519/38 | 549/38 | 549/38 | 549/38 |
| **Conventional Bombers** | | | | | | | | | |
| B-1 (Active/Reserve) | 0 | 0 | 0 | 0 | 36/18 | 36/18 | 36/16 | 36/16 | 36/16 |
| **Navy Fighter and Attack Aircraft** | | | | | | | | | |
| Active | 582/50 | 528/44 | 504/37 | 456/36 | 456/36 | 432/36 | 432/36 | 432/36 | 432/36 |
| Reserve | 90/7 | 38/3 | 38/3 | 38/3 | 38/3 | 36/3 | 36/3 | 36/3 | 36/3 |
| **Marine Corps Fighter and Attack Aircraft** | | | | | | | | | |
| Active | 320/23 | 320/23 | 308/21 | 308/21 | 308/21 | 280/21 | 280/21 | 280/21 | 280/21 |
| Reserve | 68/5 | 48/4 | 48/4 | 48/4 | 48/4 | 48/4 | 48/4 | 48/4 | 48/4 |
| **Naval Forces** | | | | | | | | | |
| Strategic Forces Ships | 19 | 16 | 17 | 18 | 18 | 18 | 18 | 18 | 18 |
| Battle Forces | 315 | 300 | 294 | 292 | 271 | 256 | 257 | 258 | 257 |
| Support Forces Ships | 41 | 37 | 26 | 26 | 26 | 25 | 25 | 25 | 25 |
| Reserve Forces Ships | 16 | 19 | 18 | 18 | 18 | 18 | 16 | 15 | 15 |
| **Total Ship Battle Forces** | 391 | 372 | 355 | 354 | 333 | 317 | 316 | 316 | 315 |
| Mobilization Category B: Mine Warfare Ships | 1 | 1 | 2 | 6 | 8 | 10 | 11 | 11 | 11 |
| Local Defense Mine Warfare Ships and Coastal Defense Craft | 7 | 12 | 13 | 13 | 13 | 12 | 13 | 13 | 11 |
| **Total Other Forces[e]** | 8 | 13 | 15 | 19 | 21 | 22 | 24 | 24 | 22 |

NOTE:  PMAI = primary mission aircraft inventory.

[a] Includes the Eskimo Scout Group and the armored cavalry regiments.

[b] The PMAI counts given here include combat-coded aircraft only.

[c] Reductions in the number of squadrons reflect consolidations and organizational changes.

[d] A previously planned reduction to 906 aircraft has been delayed to FY 2001 because of delays in converting some combat units into training units.

[e] Excludes auxiliaries and sealift forces.

| DEPARTMENT OF DEFENSE AIRLIFT AND SEALIFT FORCE HIGHLIGHTS | | | | | | | | Table D-3 | |
|---|---|---|---|---|---|---|---|---|---|
| | FY 1994 | FY 1995 | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 | FY 2001 | FY 2002 |
| **Intertheater Airlift (PMAI)<sup>a</sup>** | | | | | | | | | |
| C-5 | 107 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 |
| C-141 | 214 | 199 | 187 | 163 | 143 | 136 | 104 | 88 | 69 |
| KC-10<sup>b</sup> | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 |
| C-17 | 9 | 17 | 22 | 24 | 30 | 37 | 46 | 58 | 72 |
| **Intratheater Airlift (PMAI)<sup>a</sup>** | | | | | | | | | |
| C-130<sup>c</sup> | 424 | 428 | 432 | 430 | 425 | 425 | 425 | 418 | 418 |
| **Sealift Ships, Active<sup>d</sup>** | | | | | | | | | |
| Tankers | 18 | 18 | 12 | 13 | 10 | 10 | 10 | 10 | 10 |
| Cargo | 51 | 51 | 49 | 48 | 43 | 49 | 52 | 57 | 60 |
| **Sealift Ships, Reserve** | | | | | | | | | |
| RRF<sup>e</sup> | 93 | 77 | 82 | 87 | 88 | 87 | 87 | 86 | 73<sup>f</sup> |

NOTE: PMAI = primary mission aircraft inventory.

[a] Includes the active and reserve component inventories. The numbers shown reflect only combat support and industrial-funded PMAI aircraft; development/test and training aircraft are excluded.

[b] Includes 37 KC-10s allocated for airlift missions.

[c] Does not include Department of the Navy aircraft.

[d] Includes fast sealift (FSS), afloat prepositioning, and common-user (charter) ships, plus (through FY 1998) aviation support ships. From FY 1999 on, includes large, medium-speed roll-on/roll-off (LMSR) vessels and Ready Reserve Force (RRF) ships tendered to the Military Sealift Command (MSC). All of the ships (except for the surge LMSR and FSS vessels) are in full operational status; the FSS ships and surge LMSRs are available on four days' notice.

[e] The RRF includes vessels assigned to 4-, 5-, 10-, 20-, or 30-day reactivation readiness status. The ship counts shown exclude RRF vessels tendered to the MSC for use in the prepositioning program. Inventory figures for FY 1999, FY 2000, and FY 2001 include aviation support ships.

[f] The decline in the RRF inventory in FY 2002 reflects the retirement of older breakbulk ships that had been retained pending delivery of the majority of the LMSRs.

| DEPARTMENT OF DEFENSE SPECIAL OPERATIONS FORCES HIGHLIGHTS | | | | | | | | Table D-4 | |
|---|---|---|---|---|---|---|---|---|---|
| | FY 1994 | FY 1995 | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 | FY 2001 | FY 2002 |
| Army Special Forces Groups | | | | | | | | | |
| Active | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| National Guard | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Army Psychological Operations Groups | | | | | | | | | |
| Active | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Reserve | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Army Special Operations Regiments | | | | | | | | | |
| Aviation | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Ranger | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Army Civil Affairs | | | | | | | | | |
| Battalions (Active) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Brigades (Reserve) | 9 | 9 | 9 | 9 | 8 | 8 | 8 | 8 | 8 |
| Commands (Reserve) | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 |
| Air Force Special Operations (Wings/Groups) | | | | | | | | | |
| Active | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| National Guard | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 |
| Reserve | 1/0 | 1/0 | 1/0 | 1/0 | 1/0 | 1/0 | 1/0 | 1/0 | 1/0 |
| Air Force Special Tactics Groups | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Naval Special Warfare Groups | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Naval Special Boat Squadrons | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |

# GOLDWATER-NICHOLS ACT IMPLEMENTATION REPORT

This appendix contains the Department's Joint Officer Management Annual Report for FY 1999. Except for the progress/compliance with Section 619a, Title 10, United States Code, Tables E-2, E-5, reasons in Tables E-9 and E-11, and promotion objectives, the Joint Duty Assignment Management Information System was used to produce this report.

## PROGRESS/COMPLIANCE WITH SECTION 619A, TITLE 10, U.S. CODE

Section 931 of the FY 1994 National Defense Authorization Act required each Service to develop and implement personnel plans to permit the orderly promotion of officers to brigadier general or rear admiral (lower half). As addressed by the certification report submitted to Congress in June 1995, these plans have been implemented by the Department, and the Services continue to show progress in reducing the number of waivers required to promote officers to general or rear admiral (lower half). The Joint Chiefs of Staff and Secretary of Defense staffs are reviewing additional measures that will enhance compliance with Title 10 requirements.

The table below shows the brigadier general/rear admiral (lower half) promotion boards approved during FY 1999, not including professionals.

Given the Department's experience and lessons learned since the implementation of Goldwater-Nichols in 1986, the Department and the Joint Staff are currently completing an extensive review of both the law and policy governing joint officer management. The recommendations from this review promise to uphold the fundamental tenets of Goldwater-Nichols while streamlining the processes that will allow the Department to continue to meet the challenges of the 21st century. These recommendations will continue to emphasize the importance of ensuring that significant number of officers be educated, trained, and experienced in joint matters to enhance the joint warfighting capability of the United States through a heightened awareness of joint requirements and multi-Service perspectives. These goals will continue to serve as a benchmark in maintaining U.S. military strength and effectiveness as a world leader.

Among the highlights of the Department's performance this past year are a continued increase of the number of Critical Occupational Specialists (COS) who have completed Joint Professional Military Education (JPME); a continued increase of COS officers designated Joint Specialty Officer (JSOs) or JSO nominees; and a continued increase of COS officers filling second tour assignments. In addition, the number of officers who are showing personal initiative by completing Phase I JPME through either the correspondence or seminar program is increasing.

The Department is committed to ensuring the completion of a joint duty remains an essential element of an officer's ability to perform at the general/flag level. Attention will continue to be devoted to guarantee long-term compliance with the personnel policy objectives of the Goldwater-Nichols DoD Reorganization Act of 1986.

| CATEGORY | USA | USAF | USMC | USN | TOTAL |
|---|---|---|---|---|---|
| Number of officers selected for O-7 | 40 | 40 | 15 | 35 | 130 |
| Number of officers joint qualified | 32 | 34 | 15 | 24 | 105 |
| Percent of officers joint qualified | 80% | 85% | 100% | 69% | 81% |
| Number of joint equivalency waivers used | 0 | 0 | 0 | 0 | 0 |

| SUMMARY OF JOINT SPECIALTY OFFICER (JSO) AND JSO NOMINEE DESIGNATIONS FOR FY 1999 | | | | | Table E-1 |
|---|---|---|---|---|---|
| | USA | USAF | USMC | USN | TOTAL |
| Number of officers designated as JSOs | 362 | 223 | 70 | 203 | 858 |
| Number of officers designated as JSO nominees | 714 | 841 | 173 | 547 | 2,275 |
| Number of JSO nominees designated under COS provisions | 368 | 365 | 101 | 316 | 1,150 |

| CRITICAL OCCUPATIONAL SPECIALTIES (COS) | | | Table E-2 |
|---|---|---|---|
| USA | USAF | USMC | USN |
| Infantry | Pilot | Infantry | Surface |
| Armor | Navigator | Tanks/AAV | Submariner |
| Artillery | Command/Control Operations | Artillery | Aviation |
| Air Defense Artillery | Space/Missile Operations | Air Control/Air Support | SEALS |
| Aviation | | Anti-Air Warfare | Special Operations |
| Special Operations | | Aviation | |
| Combat Engineers | | Engineers | |

| SUMMARY OF OFFICERS ON ACTIVE DUTY WITH A CRITICAL OCCUPATIONAL SPECIALTY (AS OF SEPTEMBER 30, 1999) | | | | | Table E-3 |
|---|---|---|---|---|---|
| | USA | USAF | USMC | USN | TOTAL |
| COS officers who have completed JPME | 1,539 | 2,074 | 525 | 1,452 | 5,590 |
| COS officers designated as JSOs | 977 | 1,168 | 398 | 888 | 3,431 |
| COS officers designated as JSO nominees | 2,227 | 2,951 | 573 | 2,332 | 8,083 |
| COS officers designated as JSO nominees who have not completed JPME | 1,627 | 1,988 | 422 | 1,764 | 5,801 |
| COS JSO nominees currently serving in a Joint Duty Assignment (JDA) | 1,075 | 1,245 | 244 | 1,017 | 3,581 |
| COS JSO nominees who completed a JDA and are currently attending JPME | 6 | 11 | 0 | 11 | 28 |

| SUMMARY OF JSOs WITH CRITICAL OCCUPATIONAL SPECIALTIES WHO ARE SERVING OR HAVE SERVED IN A SECOND JOINT ASSIGNMENT (AS OF SEPTEMBER 30, 1999) | | | | | Table E-4 |
|---|---|---|---|---|---|
| FIELD GRADE | USA | USAF | USMC | USN | TOTAL |
| Have Served* | 255 (94) | 282 (112) | 30 (15) | 88 (41) | 655 (262) |
| Are Serving* | 123 (54) | 153 (62) | 19 (5) | 68 (21) | 363 (142) |
| General/Flag | | | | | |
| Have Served* | 14(6) | 37 (10) | 11 (7) | 13 (6) | 75 (29) |
| Are Serving* | 17 (7) | 29 (13) | 3 (3) | 3 (1) | 52 (24) |
| *Number in parenthesis indicates number of second joint assignments, which were to a critical joint position. | | | | | |

| ANALYSIS OF THE ASSIGNMENT WHERE OFFICERS WERE REASSIGNED (IN FY99) ON THEIR FIRST ASSIGNMENT FOLLOWING DESIGNATION AS A JSO | | | | | Table E-5 |
|---|---|---|---|---|---|
| ASSIGNMENT CATEGORY | USA | USAF | USMC* | USN | TOTAL |
| Command | 46 | 63 | 0 | 34 | 143 |
| Service Headquarters | 31 | 14 | 8 | 20 | 73 |
| Joint Staff Critical | 1 | 0 | 0 | 0 | 1 |
| Joint Staff Other | 3 | 7 | 0 | 0 | 10 |
| Other JDA | 42 | 15 | 3 | 10 | 70 |
| Professional Military Education (PME) | 42 | 38 | 11 | 20 | 111 |
| Retirement/separation | 0 | 19 | 14 | 0 | 33 |
| Other Operations | 48 | 24 | 14 | 21 | 107 |
| Other Staff | 11 | 45 | 10 | 20 | 86 |
| Other Shore (Navy) | – | – | – | 41 | 41 |
| *For the Marine Corps: Other Operations = Fleet Marine Force; Other Staff = Non-Fleet Marine Force | | | | | |

## AVERAGE LENGTH OF TOUR OF DUTY IN JOINT DUTY ASSIGNMENTS (JDA) (FY 1999) (IN MONTHS)     Table E-6

| GENERAL/FLAG OFFICERS | USA | USAF | USMC | USN | TOTAL |
|---|---|---|---|---|---|
| Joint Staff | 24.0 | 24.5 | 24.5 | 22.0 | 23.8 |
| Other Joint | 25.3 | 27.9 | 25.3 | 31.8 | 27.3 |
| Joint Total | 25.0 | 27.3 | 24.8 | 29.3 | 26.5 |
| FIELD GRADE OFFICERS | USA | USAF | USMC | USN | TOTAL |
| Joint Staff | 35.7 | 34.8 | 41.5 | 36.0 | 35.7 |
| Other Joint | 37.6 | 38.3 | 38.3 | 38.8 | 38.1 |
| Joint Total | 37.5 | 37.9 | 38.5 | 38.5 | 37.9 |

## SUMMARY OF TOUR LENGTH EXCLUSIONS FOR FY 1999     Table E-7

| CATEGORY | USA | USAF | USMC | USN | TOTAL |
|---|---|---|---|---|---|
| Retirement | 136 | 118 | 16 | 73 | 343 |
| Separation | 0 | 8 | 0 | 22 | 30 |
| Suspension from duty | 4 | 4 | 0 | 8 | 16 |
| Compassionate/Medical | 5 | 9 | 0 | 2 | 16 |
| Other joint after promotion | 16 | 10 | 1 | 9 | 36 |
| Reorganization | 11 | 23 | 1 | 46 | 81 |
| Joint overseas-short tours | 200 | 140 | 11 | 41 | 392 |
| Second tours | 34 | 33 | 0 | 25 | 92 |
| Joint accumulation | 22 | 29 | 0 | 19 | 70 |
| COS reassignment | 110 | 140 | 30 | 209 | 489 |
| Total | 538 | 514 | 59 | 454 | 1,565 |

## JOINT DUTY POSITION DISTRIBUTION BY SERVICE (AS OF SEPTEMBER 30, 1999)     Table E-8

| | USA | USAF | USMC | USN | TOTAL |
|---|---|---|---|---|---|
| Joint Staff Positions | 278 | 280 | 67 | 228 | 853 |
| Other Joint Duty Assignment Positions | 2,900 | 3,153 | 488 | 1,768 | 8,309 |
| Total Joint Duty Assignment Positions | 3,178 | 3,433 | 555 | 1,996 | 9,162 |
| Percent of Total Number of Joint Duty Assignments | 34.7% | 37.5% | 6.1% | 21.8% | 100.0% |
| Percent of Total Number of Officers | 29.8% | 36.8% | 9.0% | 24.3% | 100.0% |
| *Total Commissioned Officers:  O-3 through O-10 less professional categories. | | | | | |

| CRITICAL POSITION SUMMARY (AS OF SEPTEMBER 30, 1999) | | | | | Table E-9 |
|---|---|---|---|---|---|
| | USA | USAF | USMC | USN | TOTAL |
| Total number of critical positions | 347 | 319 | 56 | 155 | 877 |
| Number of vacant critical positions | 52 | 78 | 11 | 26 | 167 |
| Number of critical positions filled by JSOs (percent) | 204 | 187 | 10 | 68 | 469 |
| Of those positions filled, percent filled by JSOs | 69% | 78% | 22% | 53% | 66% |
| Number of critical positions filled by non-JSOs | 39 | 54 | 35 | 61 | 241 |
| Percent of critical positions filled by JSOs/Non-JSOs | 86% | 78% | 80% | 83% | 81% |

**Reasons for filling critical positions with officers who are not JSOs:**     **Total**

    Position filled by non-JSO incumbent prior to being a joint position     2

    Position being converted to a non-critical position or being deleted     10

    Joint speciality officer not yet available     20

    Best qualified officer not joint specialist     176

    Position filled by non-JSO incumbent prior to being a critical position     7

    Other     79

The following organizations have joint duty critical positions, which are filled by officers who do not possess the joint specialty:

| | |
|---|---|
| USJFCOM | 11 |
| USCENTCOM | 16 |
| NORAD | 7 |
| OSD | 7 |
| USEUCOM | 19 |
| CJCS Activities | 6 |
| USSPACECOM | 5 |
| DoD Agencies | 34 |
| Joint Staff | 31 |
| JMA | 1 |
| USSTRATCOM | 7 |
| General/Flag Officers | 27 |
| USPACOM | 20 |
| USSOCOM | 3 |
| USSOUTHCOM | 12 |
| USTRANSCOM | 4 |
| NATO Support | 1 |
| Allied Command Europe | 27 |
| Allied Command Atlantic | 2 |
| NATO | 1 |
| **TOTAL** | **241** |

| COMPARISON OF WAIVER USAGE (FY 1999) | | | | | Table E-10 |
|---|---|---|---|---|---|
| **FIELD GRADE SECTION** | **USA** | **USAF** | **USMC** | **USN** | **TOTAL** |
| JSO Designations | 362 | 223 | 70 | 203 | 858 |
| JSO Sequence Waivers | 8 | 3 | 1 | 6 | 18 |
| JSO Two-tour Waivers | 19 | 2 | 2 | 9 | 32 |
| JSOs Graduating from JPME | 6 | 14 | 3 | 6 | 29 |
| JDA Assignment Waivers Granted | 2 | 2 | 0 | 1 | 5 |
| Field Grade Officers who departed JDAs | 1,193 | 1,115 | 183 | 772 | 3,263 |
| Field Grade JDA tour length waivers | 76 | 115 | 2 | 36 | 229 |
| **GENERAL/FLAG OFFICER SECTION** | **USA** | **USAF** | **USMC** | **USN** | **TOTAL** |
| JSO Designations | 0 | 0 | 0 | 8 | 8 |
| JSO Designation Waivers | 0 | 0 | 0 | 1 | 1 |
| General/Flag Officers who departed JDAs | 30 | 34 | 8 | 24 | 96 |
| General/Flag Officer JDA tour length waivers | 16 | 12 | 2 | 6 | 36 |
| Attended CAPSTONE | 47 | 42 | 12 | 27 | 128 |
| CAPSTONE Waivers | 0 | 0 | 0 | 7 | 7 |
| Selected for Promotion to O-7* | 40 | 40 | 15 | 35 | 130 |
| Good of the Service Waivers | 0 | 0 | 0 | 3 | 3 |
| Other Waivers* | 27 | 15 | 3 | 20 | 65 |
| *Does not include professional categories. | | | | | |

| JOINT PROFESSIONAL MILITARY EDUCATION PHASE II SUMMARY (FY 1999) | | | | | Table E-11 |
|---|---|---|---|---|---|
| | USA | USAF | USMC | USN | TOTAL |
| Students graduating from Armed Forces Staff College in FY 1999 | 251 | 349 | 52 | 167 | 819 |
| Students who had not completed Resident PME | 85 | 227 | 0 | 43 | 355 |
| (Percent of Total) | 33.9% | 65.0% | 0.0% | 25.7% | 43.3% |
| Students who had completed non-resident PME | 85 | 227 | 0 | 42 | 354 |
| (Percent of Total) | 33.9% | 65.0% | 0.0% | 25.1% | 43.2% |
| Students without resident or non-resident PME | 0 | 0 | 0 | 1 | 1 |
| (Percent of Total | 0.0% | 0.0% | 0.0% | 0.6% | 0.1% |

Reasons for Students not Completing Resident Professional Military Education (PME) Prior to Attending Phase II:

| | |
|---|---|
| Officer completed Phase I by correspondence/seminar | 345 |
| Officer completed Phase I equivalent program | 9 |
| Officer scheduled to attend a resident PME immediately following Phase II | 1 |
| Officer career path did not allow attendance at a resident PME program | 0 |
| Other | 0 |

| TEMPORARY JOINT TASK FORCE CREDIT (FY 1999) | | | | | Table E-12 |
|---|---|---|---|---|---|
| CATEGORY | USA | USAF | USMC | USN | TOTAL |
| Full Joint Tour Credit | 0 | 0 | 0 | 0 | 0 |
| Cumulative Credit | 0 | 0 | 0 | 0 | 0 |

| FY 1999 JOINT OFFICER PROMOTION RATES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ARMY JOINT OFFICER PROMOTION COMPARISONS | | | | | | | Table E-13 | | |
| | | ARE SERVING IN | | | HAVE SERVED IN | | | TOTAL IN ZONE | | |
| GRADE | CATEGORY | IN ZONE % | BELOW ZONE % | ABOVE ZONE % | IN ZONE % | BELOW ZONE % | ABOVE ZONE % | CON | SEL | % |
| O-8 | Joint Staff | 100 | N/A | N/A | 80 | N/A | N/A | 8 | 7 | 88 |
| | JSO | N/A | N/A | N/A | N/A | N/A | N/A | 23 | 10 | 44 |
| | Service Hqs | 67 | N/A | N/A | 60 | N/A | N/A | 11 | 7 | 64 |
| | Other Joint | 80 | N/A | N/A | 40 | N/A | N/A | 15 | 8 | 53 |
| | Board Avg | N/A | N/A | N/A | N/A | N/A | N/A | 62 | 32 | 52 |
| O-7 | Joint Staff | 9 | N/A | N/A | 0 | N/A | N/A | 86 | 4 | 5 |
| | JSO | N/A | N/A | N/A | N/A | N/A | N/A | 730 | 13 | 2 |
| | Service Hqs | 5 | N/A | N/A | 1 | N/A | N/A | 194 | 7 | 4 |
| | Other Joint | 5 | N/A | N/A | 3 | N/A | N/A | 272 | 13 | 5 |
| | Board Avg | N/A | N/A | N/A | N/A | N/A | N/A | 1725 | 40 | 2 |
| O-6 | Joint Staff | 63 | 0 | 8 | 74 | 5 | 0 | 45 | 31 | 69 |
| | JSO | 38 | 0 | 4 | 65 | 4 | 0 | 125 | 74 | 60 |
| | Service Hqs | 37 | 2 | 2 | 58 | 3 | 0 | 184 | 96 | 52 |
| | Other Joint | 56 | 0 | 4 | 19 | 1 | 3 | 246 | 91 | 37 |
| | Board Avg | 42 | 2 | 3 | 42 | 2 | 3 | 806 | 341 | 42 |
| O-5 | Joint Staff | 92 | 22 | 0 | N/A | 0 | N/A | 12 | 11 | 92 |
| | JSO | 100 | 0 | 0 | 86 | 0 | N/A | 7 | 6 | 86 |
| | Service Hqs | 72 | 5 | 0 | 84 | 13 | 0 | 114 | 88 | 77 |
| | Other Joint | 81 | 6 | 5 | 52 | 2 | 7 | 317 | 233 | 74 |
| | Board Avg | 69 | 4 | 3 | 69 | 4 | 3 | 1386 | 954 | 69 |
| O-4 | Joint Staff | N/A | N/A | N/A | N/A | N/A | N/A | 0 | 0 | 0 |
| | JSO | N/A | N/A | N/A | N/A | N/A | N/A | 0 | 0 | 0 |
| | Service Hqs | 78 | 0 | 0 | N/A | N/A | N/A | 9 | 7 | 78 |
| | Other Joint | 75 | 0 | 0 | 0 | N/A | N/A | 5 | 3 | 60 |
| | Board Avg | 78 | 4 | 19 | 78 | 4 | 19 | 1732 | 1353 | 78 |
| NOTE: | | | | | | | | | |
| CON = Considered; SEL = Selected | | | | | | | | | |

## FY 1999 JOINT OFFICER PROMOTION RATES (Continued)
## AIR FORCE JOINT OFFICER PROMOTION COMPARISONS — Table E-13

| | | ARE SERVING IN | | | HAVE SERVED IN | | | TOTAL IN ZONE | | |
|---|---|---|---|---|---|---|---|---|---|---|
| GRADE | CATEGORY | IN ZONE % | BELOW ZONE % | ABOVE ZONE % | IN ZONE % | BELOW ZONE % | ABOVE ZONE % | CON | SEL | % |
| O-8 | Joint Staff | 33 | N/A | N/A | 0 | N/A | N/A | 9 | 1 | 11 |
| | JSO | N/A | N/A | N/A | N/A | N/A | N/A | 61 | 19 | 31 |
| | Service Hqs | 29 | N/A | N/A | 13 | N/A | N/A | 21 | 5 | 24 |
| | Other Joint | 0 | N/A | N/A | 0 | N/A | N/A | 5 | 0 | 0 |
| | Board Avg | N/A | N/A | N/A | N/A | N/A | N/A | 93 | 28 | 30 |
| O-7 | Joint Staff | 10 | N/A | N/A | 3 | N/A | N/A | 51 | 3 | 6 |
| | JSO | N/A | N/A | N/A | N/A | N/A | N/A | 565 | 26 | 5 |
| | Service Hqs | 7 | N/A | N/A | 2 | N/A | N/A | 144 | 8 | 6 |
| | Other Joint | 1 | N/A | N/A | 3 | N/A | N/A | 229 | 4 | 2 |
| | Board Avg | N/A | N/A | N/A | N/A | N/A | N/A | 1615 | 40 | 3 |
| O-6 | Joint Staff | 86 | 12 | 25 | 55 | 4 | 0 | 47 | 34 | 72 |
| | JSO | 61 | 0 | 5 | 57 | 2 | 0 | 125 | 71 | 57 |
| | Service Hqs | 53 | 2 | 6 | 61 | 6 | 0 | 150 | 89 | 59 |
| | Other Joint | 47 | 2 | 4 | 34 | 2 | 17 | 204 | 84 | 41 |
| | Board Avg | 41 | 2 | 1 | 41 | 2 | 1 | 798 | 330 | 41 |
| O-5 | Joint Staff | 95 | 5 | 0 | N/A | 0 | 0 | 19 | 18 | 95 |
| | JSO | N/A | N/A | N/A | N/A | 0 | N/A | 0 | 0 | 0 |
| | Service Hqs | 80 | 9 | 9 | 81 | 9 | 0 | 183 | 147 | 80 |
| | Other Joint | 71 | 4 | 6 | 59 | 2 | 4 | 386 | 262 | 68 |
| | Board Avg | 65 | 4 | 3 | 65 | 4 | 3 | 1817 | 1179 | 65 |
| O-4 | Joint Staff | N/A | N/A | N/A | N/A | N/A | N/A | 0 | 0 | 0 |
| | JSO | N/A | N/A | N/A | N/A | N/A | N/A | 0 | 0 | 0 |
| | Service Hqs | 96 | N/A | 100 | 100 | N/A | N/A | 31 | 30 | 97 |
| | Other Joint | 86 | N/A | 100 | 80 | N/A | 0 | 27 | 23 | 85 |
| | Board Avg | 86 | N/A | 13 | 86 | N/A | 13 | 1953 | 1689 | 87 |

NOTE:
CON = Considered; SEL = Selected

| FY 1999 JOINT OFFICER PROMOTION RATES (Continued) MARINE CORPS JOINT OFFICER PROMOTION COMPARISONS | | | | | | | | | | Table E-13 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ARE SERVING IN | | | HAVE SERVED IN | | | TOTAL IN ZONE | | |
| GRADE | CATEGORY | IN ZONE % | BELOW ZONE % | ABOVE ZONE % | IN ZONE % | BELOW ZONE % | ABOVE ZONE % | CON | SEL | % |
| O-8 | Joint Staff | 0 | N/A | N/A | 50 | N/A | N/A | 3 | 1 | 33 |
| | JSO | N/A | N/A | N/A | N/A | N/A | N/A | 17 | 9 | 53 |
| | Service Hqs | 22 | N/A | N/A | 100 | N/A | N/A | 12 | 5 | 42 |
| | Other Joint | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | Board Avg | N/A | N/A | N/A | N/A | N/A | N/A | 22 | 10 | 46 |
| O-7 | Joint Staff | 13 | N/A | N/A | 11 | N/A | N/A | 35 | 4 | 11 |
| | JSO | N/A | N/A | N/A | N/A | N/A | N/A | 200 | 9 | 5 |
| | Service Hqs | 4 | N/A | N/A | 0 | N/A | N/A | 67 | 2 | 3 |
| | Other Joint | 6 | N/A | N/A | 3 | N/A | N/A | 76 | 3 | 4 |
| | Board Avg | N/A | N/A | N/A | N/A | N/A | N/A | 490 | 15 | 3 |
| O-6 | Joint Staff | 53 | 0 | 0 | 100 | 0 | N/A | 18 | 11 | 61 |
| | JSO | 40 | 0 | 0 | 50 | 0 | 0 | 31 | 13 | 42 |
| | Service Hqs | 25 | 0 | 0 | 50 | 0 | 0 | 38 | 15 | 40 |
| | Other Joint | 55 | 0 | 0 | 21 | 0 | 0 | 41 | 19 | 46 |
| | Board Avg | 44 | 0 | 0 | 44 | 0 | 0.01 | 207 | 92 | 44 |
| O-5 | Joint Staff | 57 | 0 | N/A | 0 | N/A | N/A | 8 | 4 | 50 |
| | JSO | N/A | N/A | N/A | N/A | N/A | N/A | 0 | 0 | 0 |
| | Service Hqs | 77 | 0 | 0 | 73 | 0 | 0.04 | 95 | 71 | 75 |
| | Other Joint | 81 | 0 | 7 | 78 | 0 | 0 | 78 | 63 | 81 |
| | Board Avg | 68 | 0 | 5 | 68 | 0 | 0.05 | 563 | 381 | 68 |
| O-4 | Joint Staff | N/A | N/A | N/A | N/A | N/A | N/A | 0 | 0 | 0 |
| | JSO | N/A | N/A | N/A | N/A | N/A | N/A | 0 | 0 | 0 |
| | Service Hqs | 91 | 0 | 50 | 0 | 0 | N/A | 12 | 10 | 83 |
| | Other Joint | 100 | N/A | N/A | N/A | N/A | N/A | 4 | 4 | 100 |
| | Board Avg | 84 | 0 | 12 | 84 | 0 | 0.12 | 788 | 658 | 84 |

NOTE:
CON = Considered; SEL = Selected

## FY 1999 JOINT OFFICER PROMOTION RATES (Continued)
## NAVY JOINT OFFICER PROMOTION COMPARISONS — Table E-13

| | | ARE SERVING IN | | | HAVE SERVED IN | | | TOTAL IN ZONE | | |
|---|---|---|---|---|---|---|---|---|---|---|
| GRADE | CATEGORY | IN ZONE % | BELOW ZONE % | ABOVE ZONE % | IN ZONE % | BELOW ZONE % | ABOVE ZONE % | CON | SEL | % |
| O-8 | Joint Staff | 0 | N/A | N/A | 50 | N/A | N/A | 16 | 7 | 44 |
| | JSO | N/A | N/A | N/A | N/A | N/A | N/A | 22 | 7 | 32 |
| | Service Hqs | 22 | N/A | N/A | 67 | N/A | N/A | 18 | 8 | 44 |
| | Other Joint | 40 | N/A | N/A | 56 | N/A | N/A | 14 | 7 | 50 |
| | Board Avg | N/A | N/A | N/A | N/A | N/A | N/A | 46 | 22 | 48 |
| O-7 | Joint Staff | 22 | N/A | N/A | 6 | N/A | N/A | 110 | 10 | 9 |
| | JSO | N/A | N/A | N/A | N/A | N/A | N/A | 411 | 11 | 3 |
| | Service Hqs | 7 | N/A | N/A | 1 | N/A | N/A | 260 | 12 | 5 |
| | Other Joint | 3 | N/A | N/A | 3 | N/A | N/A | 247 | 7 | 3 |
| | Board Avg | N/A | N/A | N/A | N/A | N/A | N/A | 1249 | 35 | 3 |
| O-6 | Joint Staff | 93 | 0 | 50 | 73 | 0 | 0 | 48 | 38 | 79 |
| | JSO | 25 | 0 | 0 | 69 | 0 | 13 | 110 | 67 | 61 |
| | Service Hqs | 56 | 3 | 14 | 64 | 1 | 11 | 115 | 61 | 53 |
| | Other Joint | 38 | 0 | 4 | 41 | 1 | 0 | 166 | 70 | 42 |
| | Board Avg | 47 | 1 | 11 | 47 | 1 | 11 | 792 | 375 | 47 |
| O-5 | Joint Staff | 88 | 8 | 0 | 67 | 0 | 0 | 11 | 9 | 82 |
| | JSO | N/A | N/A | 0 | N/A | N/A | N/A | 0 | 0 | 0 |
| | Service Hqs | 89 | 0 | 8 | 76 | 1 | 0 | 72 | 58 | 81 |
| | Other Joint | 71 | 3 | 9 | 76 | 14 | 0 | 164 | 120 | 73 |
| | Board Avg | 65 | 1 | 6 | 65 | 1 | 6 | 1164 | 759 | 65 |
| O-4 | Joint Staff | N/A | N/A | N/A | N/A | N/A | N/A | 0 | 0 | 0 |
| | JSO | N/A | N/A | N/A | N/A | N/A | N/A | 0 | 0 | 0 |
| | Service Hqs | 60 | 0 | 33 | 100 | 0 | 0 | 16 | 12 | 75 |
| | Other Joint | 69 | 0 | 0 | 91 | 0 | 0 | 42 | 31 | 74 |
| | Board Avg | 69 | 14 | 19 | 69 | 14 | 19 | 1706 | 1178 | 69 |

NOTES:

The Navy conducted 45 separate promotion boards in competitive categories for grades O-6, O-5, and O-4 this fiscal year. For consistency purposes, they have been combined into one report.

CON = Considered; SEL = Selected

## GENERAL AND FLAG OFFICERS HOLDING MULTIPLE POSITIONS          Table E-14

In accordance with the report requirements outlined in Section 721(d)(2), the following table reports the number of general and flag officers who have simultaneously held both a position external to that officer's armed forces and another position not external to that officer's armed forces.

| Multiple Positions Counted as External to Their Armed Force | |
|---|---|
| Commander in Chief, United States Space Command | Commander, Air Force Space Command |
| Commander in Chief, United States Transportation Command | Commander, Air Mobility Command |
| Director, Command Control Systems, J-6, United States Space Command | Director, Communications and Information, Air Force Space Command |
| Deputy Commander, Canadian NORAD Region | Commander, 722 Support Squadron, Air Combat Command |
| Assistant Chief of Staff, C/J-5, United Nations Command/Combined Forces Command/United States Forces Korea | Commander, Marine Forces Korea |
| Deputy Commander, Naval Striking and Support Forces, Southern Europe | Deputy Commanding General, Fleet Marine Force, Europe |
| Assistant Chief of Staff, J-3, United Nations Command/Combined Forces Command/United States Forces Korea | Assistant Chief of Staff, G-3, 8th Army |
| Assistant Chief of Staff, J-4, United Nations Command/Combined Forces Command/United States Forces Korea | Assistant Chief of Staff, G-4, 8th Army |
| Commander, United States Defense Forces, Iceland, United States Atlantic Command | Commander, Fleet Air, Keflevik |
| **Multiple Positions Counted as Internal to Their Armed Force** | |
| Member, Joint Chiefs of Staff | Chief of Staff, United States Air Force |
| Commander, Air Forces Central Europe | Commander, United States Air Forces in Europe |
| Commander, United States Forces Japan | Commander, 5th Air Force |
| Deputy Commander in Chief, United Nations Command Korea/Deputy Commander, United States Forces Korea | Commander, 7th Air Force |
| Commander, Allied Air Forces Southern Europe | Commander, 16th Air Force |
| Commander, Alaskan Command, United States Pacific Command | Commander, 11th Air Force |
| Director, Joint Command and Control Warfare Center | Commander, Air Intelligence Agency |
| Member, Joint Chiefs of Staff | Commandant of the Marine Corps |
| Member, Joint Chiefs of Staff | Chief of Staff, United States Army |
| Chief of Staff, United Nations Command/Combined Forces Command/United States Forces Korea | Commanding General, 8th Army |
| Member, Joint Chiefs of Staff | Chief of Naval Operations |
| Commander in Chief, Allied Forces, Southern Europe | Commander, United States Naval Forces, Europe |
| Commander, Naval Striking and Support Forces, Southern Europe | Commander, Sixth Fleet |
| Commander, Striking Fleet, Atlantic | Commander, Second Fleet |
| Commander, Submarine, Allied Command, Atlantic | Commander, Submarine Force, United States Atlantic Fleet |
| Commander, United States Naval Forces and Middle East Force/United States Central Command | Commander, Fifth Fleet |
| Commander, Maritime Air Forces, Mediterranean | Commander, Fleet Air Mediterranean |
| United States Pacific Command Representative, Guam | Commander, United States Naval Base Guam |

## PERSONNEL READINESS FACTORS BY RACE AND GENDER

This appendix responds to the National Defense Authorization Act FY 1996 (Public Law 103-337, Section 533) which requires that the Department submit a report of readiness factors by race and gender as part of its annual report.

## INDISCIPLINE TRENDS

The Department of Defense has issued a directive requiring the Services and DoD components to submit reports on criminal incidents to a central repository under the Defense Incident-Based Reporting System (DIBRS). This system was designed to incorporate the crime reporting requirements of the Uniform Federal Crime Reporting Act of 1998, the Victims Rights and Restitution Act of 1990, and the Brady Handgun Violence Prevention Act of 1994. The DIBRS includes a requirement to report information on incidents involving sexual harassment and race-motivated offenses.

The military departments began partial reporting of data to DIBRS in 1997. Funding and other problems, however, have prevented the Services from fully implementing DIBRS.

### Military Equal Opportunity Complaint Trends

Since FY 1987, the Services have reported annually to DoD the number of resolved equal opportunity (EO) formal complaints from active duty personnel of sexual harassment and other types of unlawful discrimination (e.g., complaints based on race, sex, national origin, and religion) filed by military personnel. Formal EO complaints are complaints that have been documented on a Service EO complaint form. At the end of FY 1998, the number of formal complaints of sexual harassment and other types of unlawful discrimination totaled 1,281, representing about one complaint per each thousand active duty military personnel.

The percentage of confirmed sexual harassment complaints has remained at 50 percent or above since FY 1991. The percentage of confirmed other types of unlawful discrimination complaints remained over 30 percent from FY 1992 through FY 1996. In FY 1998, the percentage of confirmed other types of unlawful discrimination complaints decreased to 20 percent. While complaint confirmation rates may appear to be a positive sign, they are not clear-cut indicators of the effectiveness of Service military equal opportunity programs. Because several factors may lead to allegations of sexual harassment or discrimination (i.e., misperceptions, mismanagement, failures to communicate, etc.), complaints that were not confirmed may be indicative of other forms of organizational problems or morale issues. Service military equal opportunity programs are composed of several dimensions (e.g., formal and informal complaint systems, education and training, climate assessment, and affirmative action initiatives) which must be assessed collectively to rate program effectiveness.

### Sexual Harassment Complaints

The total number of sexual harassment complaints began at 513 in FY 1987, fluctuated through FY 1994, and declined steadily through FY 1998. The number of sexual harassment complaints peaked at 1,599 in FY 1993. The percent of substantiated sexual harassment complaints reflects an upward trend from 38 percent in FY 1987 to a high of 59 percent in FY 1995 and 1996. The percentage of confirmed sexual harassment complaints has remained at 50 percent or above since FY 1991. In FY 1998, 53 percent of formal sexual harassment complaints were confirmed.

### Other Types of Unlawful Discrimination Complaints

The total number of other types of unlawful discrimination complaints in FY 1987 was 523. This number has fluctuated over the last 11 years, though never falling below the starting figure. The number of other types of unlawful discrimination complaints peaked at 2,103 in FY 1992. The percent of other types of unlawful discrimination complaints that were substantiated reflects an upward trend from 26 percent in FY 1987 to a high of 41 percent in FY 1995, with a decline to 20 percent in FY 1998.

## NONDEPLOYABILITY TRENDS

The Office of the Secretary of Defense, in conjunction with the Services, annually reviews permanent and temporary limitations on the deployability of service

members and addresses the issue of nondeployability in relation to readiness. Current Department policy recognizes Service-unique and unit-unique circumstances and provides the Services with the flexibility to manage those situations to meet readiness goals.

Nondeployability is measured in four permanent condition categories: HIV-Positive, Medical Permanent, Hazardous Duty Restriction, and Country Restriction. A service member can be counted as nondeployable in one category only. Since the Services are given some latitude in determining who is or is not deployable based on certain conditions, a meaningful comparison between Services in a number of categories is not always possible (e.g., not all Services report Hazardous Duty and/or Country Restriction categories).

Permanent medical limitations (i.e., HIV-Positive, cancer, heart disease, asthma, diabetes, and other progressive medical conditions) are a small part of the overall nondeployable population. The actual number of members with permanent conditions remains relatively small and is manageable, through the assignment process, minimizing readiness impact.

Tables F-23 to F-32 present the data for all DoD and each of the Services as of the end of FY 1999.

### Retention Rates

Retention remains a top priority across the Department. The Army and Marines met or exceeded aggregate enlisted retention objectives in all categories. The Navy missed initial term retention, however, in the aggregate they achieved 99 percent of their total annual mission. The Air Force missed retention in all categories for FY 1999, however, they were able to achieve 97 percent of their total annual mission.

While aggregate retention across all Services shows signs of improving, this masks significant challenges in highly technical skill sets such as communications/computer, aviation maintenance, electronic technicians, intelligence analysts, and linguists. The level of technical training and hands-on experience provided to personnel makes them very competitive in the private sector.

Today's economy is the strongest witnessed in the history of the all-volunteer force, that economic promise has opened a range of opportunities in the private sector for those in uniform who may be sitting on the fence when it comes to pursuing a military career. Attractive salary and benefits packages, coupled with geographic stability and a predictable lifestyle, are influencing many experienced, mid-career noncommissioned and commissioned officers to pursue private sector opportunities.

The new pay and retirement package provides a great start towards stabilizing retention, which in turn benefits recruiting. But pay improvements alone will not resolve all current concerns. The focus must now shift to adding predictability to the tempo of operations and the time away from home service members currently experience. This is a significant challenge because tempo exerts such a strong influence on retention and job satisfaction.

The Department's continued commitment to treat people fairly has allowed it to sustain the best-qualified, most experienced, and most diverse force in the history of the nation. This force of dedicated professionals continues to mirror the society they are sworn to defend.

### First-Term Reenlistment Rates

First-term retention experienced a decline in the Navy and Air Force in 1999. This decline is predominantly in highly technical skills sought after within the private sector employment market. The Army and Marines met first-term retention goals, but also experienced challenges in several of the same skill sets.

One of the greatest concerns is the under accessed drawdown cohorts now making initial retention decisions. This reduced population serving within the first-term retention window presents unique challenges. Each Service continues to monitor this critical population, utilize all available retention incentives, and develop new initiatives to increase retention.

## TRENDS IN PROPENSITY TO ENLIST

Since 1975, the Department of Defense annually has conducted the Youth Attitude Tracking Study (YATS), a computer-assisted telephone interview of a nationally representative sample of 10,000 young men and women. This survey provides information on the propensity, attitudes, and motivations of young people toward military service. Enlistment propensity is the percentage of youth who state they plan to definitely or probably serve on active duty in one of the Services in the next few years. Research has shown that the expressed intentions of young men and women are strong predictors of enlistment behavior.

### Enlistment Propensity Trends

Results from the 1999 YATS show that, overall, young men's propensity for military service increased over the last several years (see Table F-20). In 1999, 29 percent of 16-21 year-old men expressed interest in at least one active-duty Service, a significant increase over 1997 and 1998 (26 percent in both years).

Following the Cold War, young black men's propensity dropped from 54 percent in 1989 to 32 percent in 1994. In 1999, black men's propensity was up to 36 percent. White male propensity also dropped following the Cold War. In 1989, it was 26 percent.

Although down to 20 percent in 1998, white male propensity increased in 1999 to 22 percent. In 1999, Hispanic propensity returned to Cold War levels (46 percent) even though it had been down to 37 percent in 1997. The 1999 increase in young men's propensity is encouraging, but white and black propensity remains substantially below Cold War levels.

In recent years, career opportunities for women in the Services have opened, and more women are enlisting. As men's propensity declined following the Cold War, women's propensity remained at approximately the same level. Women's propensity is up slightly in 1999 (15 percent), compared to 1997 and 1998 (12 and 13 percent, respectively).

To downsize the military following the Cold War, the Services reduced their accession objectives below levels required to replace individuals leaving military service. Although the post-Cold War decline in young men's propensity was troubling, propensity figures nevertheless indicated a sufficient number of young men were interested in the military to allow the Services to meet reduced recruiting goals. Today, recruiting missions have risen to levels required to sustain the force. While 1999 results show some increase in propensity over the past few years, propensity was still lower than before the end of the Cold War. Thus, recruiting high-quality youth into the armed forces will continue to be a challenge.

### Factors Influencing Propensity

Regardless of their propensity for military service, YATS respondents are asked to provide, in their own words, reasons for joining and not joining the military. The most frequently mentioned reasons for joining are money for college, job training and/or experience, duty to country, pay, travel, and self-discipline.

Most young men and women see postsecondary education as the key to prosperity and job security in America. The percent of youth going to college is increasing, and YATS results show that young people are aware that the military offers money for a college education. Educational funding is the most frequently cited reason for enlisting. In 1999, 33 percent of men and 39 percent of women identified money for college as a reason for joining; comparable 1991 figures were 24 percent of men and 31 percent of women. Many young people have the will and the talent for college, but lack the funds. The Montgomery GI Bill, the Army/Navy/Marine Corps College Funds, the Service academies, and Reserve Officer Training Corps scholarship programs provide the Services with an effective means of attracting talented young men and women to the military and provide these youth the means to gain a college education.

For many non-college bound youth, military service offers an opportunity for job experience and specialized training. In 1999, job training and experience were listed as the second most frequent reason for joining the military—behind money for college. Twenty-four percent of men and 17 percent of women mentioned job training and experience as a reason for entering service. Other reasons for joining were mentioned much less frequently. Pay was mentioned by 13 percent of men and 11 percent of women; duty to country was mentioned by 12 percent of men and 9 percent of women; travel by 9 percent of men and 8 percent of women; and discipline by 6 percent of men and 4 percent of women. The percentages of men and women mentioning job training, pay, duty to country, travel, and discipline as reasons for joining have not changed significantly in the past few years.

The most frequently cited reason for not entering military service concerns military lifestyle, mentioned by 19 percent of men and 24 percent of women in 1999. Military service evokes images of discipline and regimentation for most youth. These images tend to deter many youth from interest in the military. Many college-bound young people believe they have the self-discipline to achieve their goals and see regimentation as stifling. Others, however, see externally imposed discipline as beneficial. Following the 1995 and 1997 YATS surveys, extended interviews were conducted with young men and women who seemed likely to enter the military. Some noted that learning discipline served an important maturing role in their lives; others indicated they looked forward to learning this critical life lesson in military

service and that the military would provide a guiding structure within which to get their priorities straight. It is ironic that the reason most frequently cited for not entering military service might, for some, be an important motivation for enlisting.

Other reasons cited by youth for not entering military service suggest not a rejection of the military, but consideration of a commitment to other options in life. In fact, in 1999, 9 percent of men and 8 percent of women mentioned other career interests as a reason for not joining. Eight percent of men and 16 percent of women mentioned family obligations. From extended interviews, many enlistment-age youth feel they are not able to enlist because they are needed to care for ailing parents or for their own families. Some youth (10 percent of men; 8 percent of women) suggested the length of commitment to the military is too long. While youth acknowledged that some military service might be beneficial, many were reluctant to defer their career or education plans for four years. Finally, about 11 percent of men and 9 percent of women cited danger as a reason for not entering military service; 6 percent of both men and women stated military service was against their beliefs.

Relative to whites and Hispanics, young black men and women were more likely to mention pay and travel as reasons for joining, and less likely to mention duty to country. In 1999, as in previous years, white men and women were more likely to mention other career interests as a reason not to join the military. White men and women also tended to object to the length of commitment, perhaps because they have more career opportunities than minority men and women. Finally, familial obligations were mentioned as an obstacle to military service more frequently by women (compared to men) and Hispanics (compared to whites and blacks).

## CONCLUSION

Both men's and women's propensity remained substantially below pre-drawdown levels and, if past experience is a guide, indicated recruiting will continue to be challenging. These findings underscore the need for education benefits to attract an important segment of college-bound youth (those needing money). Many other youth, however, are attracted by the prospects of job training and experience, and by the discipline universally viewed as intrinsic to military service. To meet recruiting goals, the needs of all market segments must be addressed.

Table F-1 to F-2 (Equal Opportunity Discrimination and Sexual Harassment Complaints)
Table F-3 (First-Term Retention Rates)
Table F-4 to F-6 (Army Retention Trends)
Table F-7 to F-9 (Navy Retention Trends)
Table F-10 to F-12 (Marine Corps Retention Trends)
Table F-13 to F-15 (Air Force Retention Trends)
Table F-16 to F-18 (Coast Guard Retention Trends)
Table F-19 (Total DoD Retention Trends)
Table F-20 to F-22 (Trends in Enlistment Propensity)
Table F-23 to F-32 (Nondeployable Unit Personnel)

## EQUAL OPPORTUNITY DISCRIMINATION COMPLAINTS — Table F-1

| | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ARMY** | | | | | | | | | | | | |
| Complaints Filed | 87 | 79 | 50 | 996 | 1140 | 1119 | 943 | 691 | 429 | 615 | 584 | 421 |
| Substantiated Complaints | 14 | 17 | 6 | 227 | 196 | 156 | 181 | 165 | 77 | 110 | 78 | 51 |
| Percent Substantiated | 16% | 22% | 12% | 23% | 17% | 14% | 19% | 24% | 18% | 23% | 13% | 12% |
| **NAVY** | | | | | | | | | | | | |
| Complaints Filed | 90 | 126 | 156 | 168 | 177 | 297 | 75 | 53 | 52 | 45 | 59 | 56 |
| Substantiated Complaints | 5 | 4 | 0 | 11 | 9 | 233 | 38 | 38 | 47 | 29 | 34 | 21 |
| Percent Substantiated | 6% | 3% | 0% | 7% | 5% | 78% | 51% | 72% | 90% | 64% | 58% | 38% |
| **MARINE CORPS** | | | | | | | | | | | | |
| Complaints Filed | 51 | 27 | 29 | 51 | 28 | 30 | 38 | 32 | 56 | 43 | 62 | 59 |
| Substantiated Complaints | 3 | 1 | 3 | 5 | 6 | 9 | 5 | 9 | 21 | 22 | 27 | 18 |
| Percent Substantiated | 6% | 4% | 10% | 10% | 21% | 30% | 13% | 28% | 38% | 51% | 44% | 31% |
| **AIR FORCE** | | | | | | | | | | | | |
| Complaints Filed | 295 | 363 | 564 | 591 | 489 | 657 | 826 | 452 | 559 | 483 | 309 | 187 |
| Substantiated Complaints | 115 | 166 | 272 | 299 | 213 | 318 | 357 | 217 | 299 | 201 | 105 | 56 |
| Percent Substantiated | 39% | 46% | 48% | 51% | 44% | 48% | 43% | 48% | 53% | 42% | 34% | 30% |
| **TOTAL DoD** | | | | | | | | | | | | |
| Complaints Filed | 523 | 595 | 799 | 1806 | 1834 | 2103 | 1882 | 1228 | 1096 | 1186 | 1014 | 723 |
| Substantiated Complaints | 137 | 188 | 281 | 542 | 424 | 716 | 581 | 429 | 444 | 362 | 244 | 146 |
| Percent Substantiated | 26% | 32% | 35% | 30% | 23% | 34% | 31% | 35% | 41% | 31% | 24% | 20% |

## SEXUAL HARASSMENT COMPLAINTS Table F-2

| | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ARMY** | | | | | | | | | | | | |
| Complaints Filed | 240 | 197 | 151 | 971 | 432 | 497 | 649 | 512 | 424 | 355 | 390 | 195 |
| Substantiated Complaints | 38 | 45 | 46 | 315 | 152 | 184 | 262 | 146 | 165 | 156 | 128 | 88 |
| Percent Substantiated | 16% | 23% | 30% | 32% | 35% | 37% | 40% | 29% | 39% | 44% | 33% | 45% |
| **NAVY** | | | | | | | | | | | | |
| Complaints Filed | 10 | 38 | 31 | 51 | 45 | 438 | 133 | 200 | 184 | 197 | 173 | 113 |
| Substantiated Complaints | 5 | 6 | 10 | 11 | 13 | 318 | 93 | 165 | 178 | 148 | 119 | 68 |
| Percent Substantiated | 50% | 16% | 32% | 22% | 29% | 73% | 70% | 83% | 97% | 75% | 69% | 60% |
| **MARINE CORPS** | | | | | | | | | | | | |
| Complaints Filed | 28 | 38 | 46 | 67 | 33 | 116 | 93 | 90 | 96 | 82 | 77 | 105 |
| Substantiated Complaints | 14 | 5 | 26 | 26 | 14 | 52 | 36 | 37 | 48 | 48 | 55 | 49 |
| Percent Substantiated | 50% | 13% | 57% | 39% | 42% | 45% | 39% | 41% | 50% | 59% | 71% | 47% |
| **AIR FORCE** | | | | | | | | | | | | |
| Complaints Filed | 235 | 331 | 315 | 315 | 345 | 451 | 724 | 463 | 329 | 279 | 243 | 145 |
| Substantiated Complaints | 137 | 215 | 201 | 219 | 247 | 331 | 507 | 332 | 216 | 183 | 155 | 88 |
| Percent Substantiated | 58% | 65% | 64% | 70% | 72% | 73% | 70% | 72% | 66% | 66% | 64% | 61% |
| **TOTAL DoD** | | | | | | | | | | | | |
| Complaints Filed | 513 | 604 | 543 | 1404 | 855 | 1502 | 1599 | 1265 | 1033 | 913 | 883 | 558 |
| Substantiated Complaints | 194 | 271 | 283 | 571 | 426 | 885 | 898 | 680 | 607 | 535 | 457 | 293 |
| Percent Substantiated | 38% | 45% | 52% | 41% | 50% | 59% | 56% | 54% | 59% | 59% | 52% | 53% |

| FIRST-TERM RETENTION RATES – FY 1999 | | | Table F-3 |
|---|---|---|---|
| | FY 1997 | FY 1998 | FY 1999 |
| **Army Enlisted Manpower** | | | |
| Number eligible | 45,787 | 40,027 | 40,800 |
| Number reenlisting | 24,354 | 20,578 | 20,817 |
| Percent reenlisting | 53.2% | 51.4% | 51.1% |
| **Navy Enlisted Manpower** | | | |
| Number eligible | 29,185 | 22,399 | 22,552 |
| Number reenlisting | 14,723 | 12,402 | 11,603 |
| Percent reenlisting | 50.4% | 55.4% | 51.4% |
| **Air Force Enlisted Manpower** | | | |
| Number eligible | 21,807 | 19,194 | 16,698 |
| Number reenlisting | 12,294 | 10,324 | 8,128 |
| Percent reenlisting | 56.4% | 53.8% | 48.7% |
| **Marine Corps Enlisted Manpower**[a] | | | |
| Number eligible | 24,000 (4,600) | 21,824 (4,634) | 23,029 (5,480) |
| Number reenlisting | 4,615 | 4,709 | 5,481 |
| Percent reenlisting | 19.2% | 21.5% | 23.8% |
| **DoD Totals**[b] | | | |
| Number eligible | 120,779 | 103,444 | 103,079 |
| Number reenlisting | 55,986 | 48,013 | 46,029 |
| Percent reenlisting | 46.4% (55.2%) | 46.4% (55.6%) | 44.6% (53.8%) |

[a] The number eligible reflects the total number of Marines at the end of their active service status. The Marine Corps has only limited slots per year available (shown in parentheses) to fill; these slots are considered reenlistment opportunity slots and are filled by eligible Marines.

[b] The numbers are based on the total eligible to reenlist. Percentages in parentheses reflect the totals based on the Marines' available slots, not their overall total eligible.

| CONTINUATION RATES FY 1997 – FY 1999 | | | | | | | | | | | | | | Table F-4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ACTIVE DUTY PERCENTAGE CHANGES | | | | | | | | | | | | | | |
| **ARMY MALE** | | | | | | | | | | | | | | |
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-10 | 91.7 | 63.6 | 50 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 92.3 | 66.7 | 50 |
| O-9 | 72.7 | 69.2 | 85 | 33.3 | 100 | 100 | 0 | 0 | 0 | 50 | 100 | 0 | 68.4 | 70.7 | 85.7 |
| O-8 | 89 | 88.4 | 76.7 | 72.7 | 77.8 | 77.8 | 100 | 100 | 0 | 0 | 0 | 0 | 87.4 | 87.6 | 87.6 |
| O-7 | 93.4 | 88.7 | 89 | 90.9 | 93.3 | 91.7 | 0 | 100 | 100 | 100 | 100 | 100 | 93.3 | 89.3 | 89.3 |
| O-6 | 84.3 | 82.7 | 82.7 | 86.8 | 84.7 | 86.2 | 73.1 | 89.4 | 90.6 | 92.1 | 80.6 | 84.8 | 84.4 | 82.8 | 83.1 |
| O-5 | 89.8 | 86.9 | 88.2 | 91.6 | 87.9 | 88.9 | 92.2 | 90.8 | 89.4 | 92.4 | 91.2 | 91.4 | 90.1 | 87.2 | 88.4 |
| O-4 | 91.3 | 94.8 | 94.3 | 87.2 | 95.7 | 95.8 | 87.1 | 94.3 | 94.5 | 88.1 | 94.7 | 94.4 | 90.6 | 94.9 | 94.5 |
| O-3 | 91.7 | 91.1 | 89.3 | 91.3 | 93.2 | 89.4 | 91.9 | 90.7 | 88.4 | 90.7 | 90.8 | 89.8 | 91.6 | 91.3 | 89.3 |
| O-2 | 87.7 | 87 | 87.4 | 86 | 89.3 | 91.9 | 88.5 | 91.1 | 92.9 | 87.8 | 91.7 | 89.5 | 87.6 | 87.6 | 88.1 |
| O-1 | 97.8 | 97.9 | 98 | 96.7 | 96.9 | 98.5 | 98.7 | 96.8 | 97.5 | 98.8 | 98.9 | 98.8 | 97.8 | 97.8 | 98 |
| TOTAL OFFICER | 91.1 | 91 | 90.5 | 90.2 | 92.7 | 92 | 91.2 | 92.2 | 91.7 | 91.4 | 92.7 | 91.9 | 91.1 | 91.3 | 90.7 |
| W-5 | 79.9 | 80.8 | 78.7 | 89.3 | 81.5 | 86.2 | 75 | 40 | 100 | 83.3 | 40 | 66.7 | 80.6 | 79.6 | 79.4 |
| W-4 | 85.2 | 83.6 | 86.3 | 86.6 | 86.4 | 90.9 | 88.9 | 82.1 | 93.3 | 92.1 | 93.2 | 90.9 | 85.6 | 84.2 | 87.2 |
| W-3 | 86.9 | 90.4 | 88.5 | 89.4 | 85.2 | 87.4 | 88.4 | 85.2 | 85.2 | 90.4 | 87.2 | 84.5 | 87.4 | 89.4 | 88.1 |
| W-2 | 92.6 | 93.5 | 92.6 | 91.9 | 94 | 94.5 | 92.3 | 90.5 | 92.2 | 92.1 | 95.4 | 92.3 | 92.5 | 93.5 | 92.9 |
| W-1 | 99.1 | 98.6 | 98.2 | 99.1 | 98.4 | 98.4 | 100 | 98.7 | 98.8 | 99 | 100 | 97.7 | 99.2 | 98.6 | 98.3 |
| TOTAL WARRANT | 90.6 | 91.6 | 91 | 92.5 | 91.8 | 93.3 | 92.1 | 89.1 | 91.6 | 93 | 93.4 | 91 | 91 | 91.6 | 91.3 |
| TOTAL WARRANT & OFFICER | 91.1 | 91.1 | 90.6 | 90.6 | 92.5 | 92.3 | 91.4 | 91.6 | 91.7 | 91.6 | 92.8 | 91.7 | 91.1 | 91.3 | 90.8 |
| E-9 | 80.1 | 80 | 79.6 | 81.7 | 84.4 | 86.8 | 81.3 | 82.9 | 87.4 | 82.3 | 77.1 | 85.3 | 80.8 | 81.3 | 82.8 |
| E-8 | 77.5 | 76 | 80.6 | 80.9 | 77.8 | 81.9 | 79.9 | 77.6 | 83.1 | 79.9 | 77.8 | 81 | 79 | 76.9 | 81.3 |
| E-7 | 87.6 | 86.1 | 89.7 | 86.6 | 83.6 | 84.7 | 87.8 | 85.8 | 86.4 | 86.7 | 84.5 | 85.5 | 87.2 | 85.1 | 87.5 |
| E-6 | 92.1 | 90.5 | 92.9 | 92.2 | 90.7 | 93.5 | 92.8 | 91.1 | 93.4 | 93.2 | 91.5 | 93.4 | 92.3 | 90.7 | 93.2 |
| E-5 | 83.6 | 83.2 | 84 | 88.3 | 88.5 | 89.4 | 88.2 | 86.5 | 88.5 | 86.1 | 86.4 | 87.3 | 85.4 | 85.1 | 86 |
| E-4 | 71.1 | 74.4 | 74.9 | 78.1 | 81.9 | 81.7 | 76.2 | 78.4 | 78.2 | 75.2 | 78.2 | 78.6 | 73.2 | 76.6 | 76.9 |
| E-3 | 82.8 | 84.2 | 83.6 | 84.3 | 85.3 | 85.4 | 86.4 | 88.4 | 88.2 | 85.2 | 87.1 | 85 | 83.5 | 84.9 | 84.5 |
| E-2 | 85.1 | 82.9 | 82.7 | 85.2 | 83.9 | 82.9 | 89.9 | 87.7 | 87.6 | 85.6 | 85.4 | 86.1 | 85.5 | 83.7 | 83.4 |
| E-1 | 80.4 | 79.4 | 78.7 | 80.6 | 80.9 | 80.5 | 88.2 | 85 | 86.5 | 81.8 | 82.5 | 81.6 | 81.3 | 80.4 | 80 |
| TOTAL ENLISTED | 81.2 | 81.8 | 82.5 | 85.4 | 85.5 | 86.3 | 85.7 | 85.1 | 85.8 | 84 | 84.6 | 85.1 | 82.8 | 83.2 | 83.9 |
| TOTAL | 83.3 | 83.8 | 84.2 | 85.8 | 86 | 86.7 | 86.2 | 85.7 | 86.3 | 84.9 | 85.6 | 85.9 | 84.2 | 84.5 | 85.1 |

**CONTINUATION RATES FY 1997 – FY 1999**
**ACTIVE DUTY PERCENTAGE CHANGES**
Table F-5

| | ARMY FEMALE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-9 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 |
| O-8 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 |
| O-7 | 100 | 100 | 66.7 | 100 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 75 |
| O-6 | 84.4 | 81.3 | 86.7 | 90.5 | 77.3 | 95.7 | 83.3 | 83.3 | 85.7 | 91.3 | 84 | 84 | 85.7 | 81.3 | 87.2 |
| O-5 | 85.4 | 88.3 | 88.9 | 93.5 | 90.1 | 89.9 | 85.2 | 92.3 | 93.3 | 88.9 | 88 | 88.9 | 86.8 | 88.7 | 89.2 |
| O-4 | 87.3 | 92.4 | 91.6 | 89.9 | 92.3 | 93.6 | 85.5 | 89.7 | 96.1 | 87.5 | 91.8 | 94.6 | 87.8 | 92.3 | 92.4 |
| O-3 | 86.8 | 86.5 | 85.7 | 89.4 | 92.7 | 89.5 | 90.6 | 88 | 88.3 | 90.4 | 90 | 87.7 | 87.7 | 88.2 | 86.8 |
| O-2 | 75.4 | 80.4 | 84.9 | 80.3 | 81.3 | 89 | 81.1 | 85.7 | 86.7 | 80.2 | 74.4 | 86 | 76.9 | 80.3 | 85.8 |
| O-1 | 96.3 | 96.9 | 97 | 96.7 | 97.5 | 95.9 | 97.1 | 95.5 | 97.6 | 92.6 | 98.3 | 96.1 | 96.1 | 97.1 | 96.8 |
| TOTAL OFFICER | 86.3 | 88.4 | 88.8 | 89.5 | 91.2 | 91.4 | 89 | 89.5 | 91.8 | 88.4 | 88.3 | 89.9 | 87.2 | 89 | 89.5 |
| W-5 | 100 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 50 | 0 |
| W-4 | 93.8 | 84 | 74.1 | 50 | 50 | 100 | 0 | 0 | 100 | 100 | 0 | 85 | 85 | 78.6 | 76.7 |
| W-3 | 86.1 | 81.5 | 85.5 | 83.9 | 91.7 | 86.5 | 100 | 100 | 83.3 | 100 | 80 | 91.7 | 86.7 | 84.8 | 86.2 |
| W-2 | 94.4 | 92.3 | 95.4 | 92.1 | 92.4 | 95.5 | 100 | 100 | 100 | 100 | 100 | 90.5 | 94.1 | 93.1 | 95.4 |
| W-1 | 99 | 98.8 | 98.7 | 98.9 | 99 | 97.9 | 100 | 100 | 100 | 100 | 100 | 87.5 | 99.1 | 99 | 97.9 |
| TOTAL WARRANT | 93.9 | 90.7 | 92.3 | 93.3 | 94.6 | 95.2 | 96 | 100 | 97.2 | 100 | 93 | 90.2 | 94.1 | 92.6 | 93.5 |
| TOTAL WARRANT & OFFICER | 86.7 | 88.5 | 89 | 89.9 | 91.6 | 91.9 | 89.5 | 90.2 | 92.3 | 89 | 88.6 | 89.9 | 87.6 | 89.2 | 89.8 |
| E-9 | 70.7 | 79.4 | 83.6 | 91.4 | 82.9 | 80.8 | 85.7 | 100 | 100 | 83.3 | 100 | 70 | 81.4 | 82.9 | 82.4 |
| E-8 | 77.3 | 75.5 | 76 | 88.9 | 80.1 | 84.6 | 77.8 | 91.9 | 82.2 | 90.4 | 79.7 | 83.9 | 83.4 | 78.7 | 81.3 |
| E-7 | 85.8 | 80.9 | 88.3 | 90.9 | 87.6 | 89.1 | 93.9 | 86.3 | 90.2 | 90.5 | 89.4 | 92.2 | 89.4 | 85.7 | 89.2 |
| E-6 | 91.8 | 87.8 | 89.5 | 95.8 | 90.7 | 92.9 | 94 | 91.2 | 93.4 | 91.9 | 89.8 | 93.2 | 94.4 | 89.9 | 92.1 |
| E-5 | 82.2 | 79.8 | 77.7 | 89.3 | 88.3 | 88.4 | 87.1 | 85.5 | 84.2 | 87.1 | 86.5 | 85.8 | 86.7 | 85.2 | 84.4 |
| E-4 | 71.1 | 71.9 | 71.2 | 80.1 | 81.6 | 80.7 | 80.2 | 80.1 | 77.6 | 78.4 | 79.1 | 77.6 | 76.1 | 77.1 | 76.2 |
| E-3 | 78.6 | 79.1 | 78.5 | 85.1 | 85 | 83.7 | 86.7 | 86.1 | 84.5 | 85.6 | 85.1 | 82.9 | 82.2 | 82.4 | 81.4 |
| E-2 | 78.5 | 75.1 | 75 | 86.7 | 81.4 | 82.4 | 84.4 | 83.2 | 83.2 | 88.1 | 80.3 | 79 | 82.6 | 78.3 | 78.6 |
| E-1 | 74.1 | 67.3 | 68.6 | 80.4 | 76.1 | 78.9 | 81.4 | 80.3 | 78.6 | 79.9 | 74.7 | 74.6 | 77.1 | 71.6 | 73.1 |
| TOTAL ENLISTED | 77.8 | 76 | 76 | 86.7 | 85.1 | 84.5 | 84.9 | 83.7 | 82.4 | 84.5 | 83.3 | 82.8 | 82.9 | 81.2 | 81.3 |
| TOTAL | 79.9 | 78.8 | 79 | 87 | 85.5 | 85.9 | 85.4 | 84.3 | 83.3 | 85.1 | 84 | 83.9 | 83.6 | 82.4 | 82.5 |

| CONTINUATION RATES FY 1997 – FY 1999 ACTIVE DUTY PERCENTAGE CHANGES | | | | | | | | | | | | | | Table F-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ARMY TOTAL | | | | | | | | | | | | | | |
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-10 | 91.7 | 63.6 | 50 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 92.3 | 66.7 | 50 |
| O-9 | 72.7 | 70 | 85.4 | 33.3 | 100 | 100 | 0 | 0 | 0 | 50 | 100 | 0 | 68.4 | 71.4 | 86 |
| O-8 | 89 | 88.5 | 76.9 | 72.7 | 77.8 | 77.8 | 100 | 100 | 0 | 0 | 0 | 0 | 87.4 | 87.7 | 76.2 |
| O-7 | 93.6 | 88.9 | 88.5 | 91.7 | 93.8 | 92.3 | 0 | 100 | 100 | 100 | 100 | 100 | 93.5 | 89.5 | 89 |
| O-6 | 84.3 | 82.6 | 83 | 87.2 | 84 | 87.1 | 74.1 | 88.7 | 90 | 92 | 81.4 | 84.6 | 84.5 | 82.7 | 83.4 |
| O-5 | 89.3 | 87 | 88.3 | 91.9 | 88.3 | 89.1 | 91.4 | 90.9 | 89.8 | 91.9 | 90.6 | 91 | 89.7 | 87.4 | 88.5 |
| O-4 | 90.8 | 94.5 | 94 | 87.8 | 94.9 | 95.3 | 86.9 | 93.5 | 94.8 | 88 | 94.3 | 94.4 | 90.2 | 94.5 | 94.2 |
| O-3 | 91 | 90.5 | 88.8 | 90.8 | 93.1 | 89.4 | 91.7 | 90.3 | 88.4 | 90.6 | 90.7 | 89.4 | 91 | 90.8 | 88.9 |
| O-2 | 85.7 | 86 | 87 | 84.3 | 86.9 | 91 | 87.3 | 90.2 | 91.7 | 86.1 | 87.5 | 88.7 | 85.6 | 86.3 | 87.7 |
| O-1 | 97.5 | 97.7 | 97.8 | 96.7 | 97.1 | 97.7 | 98.4 | 96.6 | 97.5 | 97.5 | 98.8 | 98.2 | 97.5 | 97.7 | 97.8 |
| TOTAL OFFICER | 90.5 | 90.7 | 90.3 | 90 | 92.3 | 91.8 | 90.9 | 91.8 | 91.7 | 90.8 | 91.8 | 91.5 | 90.5 | 91 | 90.6 |
| W-5 | 80 | 80.6 | 78.4 | 89.3 | 81.5 | 86.2 | 75 | 40 | 100 | 83.3 | 40 | 66.7 | 80.7 | 79.5 | 79.2 |
| W-4 | 85.3 | 83.6 | 86 | 86 | 85.8 | 91.1 | 86.5 | 82.1 | 93.3 | 92.3 | 91.1 | 90.9 | 85.6 | 84 | 87 |
| W-3 | 86.9 | 90.1 | 88.4 | 88.9 | 85.8 | 87.3 | 88.8 | 85.7 | 85.1 | 90.8 | 86.7 | 85.1 | 87.4 | 89.2 | 88 |
| W-2 | 92.7 | 93.4 | 92.8 | 91.9 | 93.7 | 94.7 | 92.7 | 91.1 | 92.7 | 92.6 | 95.8 | 92.2 | 92.6 | 93.5 | 93.1 |
| W-1 | 99.1 | 98.6 | 98.3 | 99.1 | 98.5 | 98.3 | 100 | 98.8 | 99 | 99.2 | 100 | 96.8 | 99.1 | 98.7 | 98.2 |
| TOTAL WARRANT | 90.8 | 91.6 | 91 | 92.6 | 92.3 | 93.6 | 92.3 | 89.7 | 92 | 93.5 | 93.3 | 91 | 91.2 | 91.7 | 91.5 |
| TOTAL WARRANT & OFFICER | 90.6 | 90.8 | 90.4 | 90.5 | 92.3 | 92.2 | 91.1 | 91.4 | 91.8 | 91.2 | 92 | 91.4 | 90.6 | 91.1 | 90.7 |
| E-9 | 79.8 | 80 | 79.8 | 82.3 | 84.3 | 86.4 | 81.5 | 83.5 | 88 | 82.3 | 77.8 | 84.6 | 80.8 | 81.4 | 82.8 |
| E-8 | 77.5 | 76 | 80.3 | 81.8 | 78.1 | 82.2 | 79.8 | 78.3 | 83.1 | 80.6 | 78 | 81.2 | 79.3 | 77.1 | 81.3 |
| E-7 | 87.5 | 85.7 | 89.6 | 87.3 | 84.3 | 85.6 | 88.2 | 85.8 | 86.7 | 87 | 85 | 86.2 | 87.4 | 85.2 | 87.7 |
| E-6 | 92.1 | 90.3 | 92.7 | 92.8 | 90.7 | 93.4 | 92.9 | 91.1 | 93.4 | 93.1 | 93.1 | 93.4 | 92.5 | 90.6 | 93.1 |
| E-5 | 83.5 | 82.9 | 83.5 | 88.5 | 88.5 | 89.1 | 88.1 | 86.4 | 87.9 | 86.2 | 86.4 | 87 | 85.6 | 85.1 | 85.8 |
| E-4 | 71.1 | 74.1 | 74.4 | 78.6 | 81.8 | 81.4 | 76.8 | 78.6 | 78.1 | 75.8 | 78.4 | 78.4 | 73.7 | 76.7 | 76.8 |
| E-3 | 82.3 | 83.5 | 82.9 | 84.5 | 85.3 | 84.9 | 86.5 | 88.1 | 87.6 | 85.2 | 86.7 | 84.6 | 83.3 | 84.5 | 83.9 |
| E-2 | 84.2 | 81.7 | 81.6 | 85.6 | 83.2 | 82.8 | 89 | 86.9 | 86.9 | 86.1 | 84.3 | 84.7 | 85 | 82.7 | 82.6 |
| E-1 | 79.6 | 77.7 | 77.4 | 80.6 | 79.8 | 80.2 | 87.2 | 84.3 | 85.3 | 81.4 | 81.2 | 80.5 | 80.6 | 79 | 79 |
| TOTAL ENLISTED | 80.9 | 81.2 | 81.8 | 85.7 | 85.4 | 86.1 | 85.6 | 84.9 | 85.3 | 84.1 | 84.4 | 84.7 | 82.8 | 82.9 | 83.5 |
| TOTAL | 83 | 83.2 | 83.7 | 86 | 85.9 | 86.5 | 86.1 | 85.5 | 85.9 | 85 | 85.3 | 85.6 | 84.1 | 84.2 | 84.7 |

| CONTINUATION RATES FY 1997 – FY 1999 ACTIVE DUTY PERCENTAGE CHANGES | | | | | | | | | | | | | | | Table F-7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NAVY MALE** | | | | | | | | | | | | | | | |
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-10 | 42.9 | 100 | 62.5 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 42.9 | 100 | 66.7 |
| O-9 | 83.3 | 77.3 | 76.5 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 77.3 | 76.5 |
| O-8 | 74.3 | 77.3 | 78.9 | 0 | 100 | 100 | 100 | 0 | 0 | 0 | 100 | 0 | 74.6 | 76.9 | 78.1 |
| O-7 | 91.8 | 88.2 | 86.8 | 66.7 | 75 | 100 | 0 | 0 | 100 | 100 | 0 | 0 | 91.1 | 87.7 | 87.5 |
| O-6 | 86 | 82.9 | 85 | 90.3 | 88.6 | 91.4 | 100 | 84.8 | 92.9 | 87.5 | 84.8 | 84.8 | 86.2 | 83.1 | 85.3 |
| O-5 | 90.8 | 89.9 | 90.3 | 93.4 | 93.3 | 91.7 | 95.6 | 94.4 | 91.3 | 85.6 | 90.5 | 87.3 | 90.8 | 90.1 | 90.3 |
| O-4 | 90.3 | 92.6 | 88.7 | 89.4 | 91.6 | 88.5 | 94.8 | 92.1 | 92.3 | 91.6 | 92.7 | 92.2 | 90.5 | 92.5 | 88.9 |
| O-3 | 87.4 | 86.2 | 85.4 | 91.4 | 89.2 | 89.2 | 89 | 87.2 | 85.2 | 89.5 | 85 | 84.2 | 87.8 | 86.3 | 85.5 |
| O-2 | 96.1 | 96.3 | 95.1 | 94.6 | 94.6 | 95.8 | 95.7 | 96.4 | 92.2 | 95 | 95.9 | 92.7 | 95.9 | 96.1 | 94.9 |
| O-1 | 99.5 | 99 | 99.1 | 99 | 98.4 | 99 | 98.8 | 99.1 | 98.6 | 100 | 100 | 99 | 99.5 | 99 | 99.1 |
| TOTAL OFFICER | 90.6 | 90.2 | 89.3 | 93 | 92.3 | 92 | 93.5 | 92.2 | 91 | 92.1 | 90.9 | 89.5 | 90.8 | 90.4 | 89.5 |
| W-4 | 64.7 | 70.3 | 75.2 | 68.6 | 76.7 | 76.2 | 66.7 | 70 | 72.7 | 73.3 | 82.8 | 82.1 | 65.7 | 71.8 | 75.9 |
| W-3 | 81.8 | 84 | 83.2 | 88.9 | 87.8 | 87.1 | 87.5 | 75 | 87.5 | 95.7 | 80.5 | 86.7 | 83.6 | 84.1 | 84 |
| W-2 | 94.1 | 93.4 | 91.1 | 94.6 | 92.6 | 95.2 | 100 | 80 | 100 | 96.3 | 100 | 85.7 | 94.3 | 93.4 | 91.8 |
| W-1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL WARRANT | 82.8 | 85.1 | 84.7 | 88.6 | 88.8 | 89.3 | 84.8 | 74.1 | 84.6 | 89.3 | 86 | 84.4 | 83.9 | 85.5 | 85.4 |
| TOTAL WARRANT & OFFICER | 90.3 | 90 | 89.2 | 92.6 | 91.9 | 91.8 | 93.4 | 91.9 | 90.9 | 91.9 | 90.6 | 89.3 | 90.6 | 90.2 | 89.4 |
| E-9 | 81.4 | 80.5 | 78.3 | 84.9 | 81.6 | 81.3 | 88.7 | 83.3 | 76.8 | 83.6 | 80 | 84 | 82.1 | 80.6 | 79.1 |
| E-8 | 85.4 | 80.8 | 80.4 | 88.7 | 85.2 | 86.5 | 86.3 | 82.6 | 84 | 84.4 | 83.3 | 77.6 | 85.6 | 81.5 | 80.9 |
| E-7 | 89.7 | 88.8 | 85.6 | 92.2 | 91.1 | 88.6 | 91.6 | 89.4 | 88.3 | 87.2 | 85.7 | 84.3 | 89.8 | 88.9 | 86 |
| E-6 | 89.3 | 88.7 | 86.9 | 90.7 | 89.3 | 86.8 | 90.5 | 90 | 87.8 | 90.3 | 91.4 | 90 | 89.7 | 89 | 87.2 |
| E-5 | 85.9 | 86.3 | 85.8 | 91.7 | 91.7 | 91.3 | 89.1 | 88.9 | 88.2 | 94.4 | 94.3 | 93.9 | 87.9 | 88.2 | 87.7 |
| E-4 | 74.1 | 77.1 | 77.5 | 81.6 | 82.4 | 82.3 | 76.2 | 79.5 | 79.2 | 84.3 | 86.2 | 85.3 | 76.3 | 78.9 | 79.1 |
| E-3 | 73.7 | 80.2 | 82.9 | 75.7 | 80.6 | 81.9 | 76.9 | 81.6 | 83.5 | 82.5 | 86.7 | 88.5 | 74.9 | 80.9 | 83.3 |
| E-2 | 82.5 | 84 | 85.2 | 79.3 | 81.8 | 83.5 | 86.5 | 87.4 | 87.2 | 88.3 | 90 | 89.7 | 82.7 | 84.4 | 85.5 |
| E-1 | 78.8 | 80.3 | 79.3 | 78.9 | 80.8 | 80.4 | 84.9 | 83.8 | 84.8 | 85.5 | 86 | 85.5 | 80 | 81.3 | 80.8 |
| TOTAL ENLISTED | 82.3 | 83.8 | 83.4 | 84.9 | 85.9 | 85.6 | 83.3 | 84.8 | 84.7 | 88.3 | 89.1 | 88.5 | 83.2 | 84.7 | 84.4 |
| TOTAL | 83.6 | 84.9 | 84.5 | 85.3 | 86.2 | 85.9 | 83.9 | 85.3 | 85.1 | 88.6 | 89.2 | 88.6 | 84.2 | 85.5 | 85.1 |

| CONTINUATION RATES FY 1997 – FY 1999 ACTIVE DUTY PERCENTAGE CHANGES | | | | | | | | | | | | | | Table F-8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAVY FEMALE | | | | | | | | | | | | | | |
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| O-9 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 |
| O-8 | 0 | 50 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 100 |
| O-7 | 80 | 100 | 100 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 100 | 100 |
| O-6 | 87.8 | 85.7 | 89.7 | 90 | 100 | 93.3 | 100 | 66.7 | 100 | 100 | 78.6 | 91.7 | 88.7 | 85.8 | 90.1 |
| O-5 | 91.9 | 89.7 | 84.3 | 96.1 | 94.9 | 88.2 | 90.9 | 92.9 | 89.5 | 97.1 | 82.9 | 90.3 | 92.3 | 89.8 | 84.9 |
| O-4 | 91 | 93.9 | 89.3 | 95 | 96.3 | 91.7 | 98.1 | 98.3 | 90 | 96.7 | 95.5 | 93.8 | 91.9 | 94.4 | 89.8 |
| O-3 | 87.5 | 86.7 | 86.1 | 88.2 | 91.4 | 88.7 | 87.5 | 87.7 | 88.5 | 86.5 | 87.6 | 82.8 | 87.5 | 87.2 | 86.3 |
| O-2 | 89.7 | 91.1 | 91 | 91.4 | 92.7 | 87.9 | 88.2 | 94.9 | 95.8 | 94.7 | 88.9 | 92 | 90.1 | 91.3 | 90.9 |
| O-1 | 98.4 | 98 | 98.5 | 98.3 | 99 | 98 | 100 | 100 | 93.9 | 100 | 100 | 100 | 98.6 | 98.4 | 98.3 |
| TOTAL OFFICER | 90.4 | 90.4 | 88.7 | 92.3 | 94.2 | 90.5 | 92 | 93 | 90.9 | 93.8 | 91 | 90.3 | 90.8 | 90.9 | 89 |
| W-4 | 87.5 | 77.8 | 66.7 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 87.5 | 77.8 | 70 |
| W-3 | 71.4 | 72.7 | 71.4 | 100 | 60 | 100 | 100 | 100 | 0 | 0 | 0 | 0 | 77.1 | 71.4 | 75 |
| W-2 | 93.3 | 90.9 | 85.7 | 93.3 | 92.9 | 93.8 | 100 | 100 | 100 | 100 | 100 | 100 | 93.6 | 91.8 | 89.1 |
| W-1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL WARRANT | 86.5 | 84 | 78.5 | 95.2 | 84.2 | 94.7 | 100 | 100 | 100 | 100 | 100 | 100 | 88.4 | 84.7 | 83.1 |
| TOTAL WARRANT & OFFICER | 90.4 | 90.3 | 88.6 | 92.4 | 93.9 | 90.6 | 92.1 | 93 | 91 | 93.8 | 91.1 | 90.3 | 90.8 | 90.8 | 89 |
| E-9 | 84.2 | 73.3 | 78 | 100 | 87.5 | 90 | 100 | 66.7 | 100 | 100 | 100 | 100 | 85.9 | 74.5 | 79.8 |
| E-8 | 85.5 | 82 | 73.7 | 88.7 | 85.2 | 75 | 87.5 | 75 | 62.5 | 90 | 90.9 | 100 | 86 | 82.5 | 74.4 |
| E-7 | 90.8 | 89.2 | 82.8 | 91.5 | 92.9 | 90 | 97 | 91.5 | 89.2 | 93.8 | 91 | 90.9 | 91.2 | 90.1 | 84.8 |
| E-6 | 90.3 | 88.9 | 84.2 | 93.7 | 92.3 | 88 | 91.5 | 90.7 | 90.3 | 88.9 | 92 | 88.8 | 91.2 | 90.1 | 85.9 |
| E-5 | 85.1 | 83.4 | 82.7 | 92.2 | 90.3 | 89.4 | 86.7 | 87.5 | 87.5 | 89.3 | 86.5 | 90.1 | 88 | 86.4 | 85.9 |
| E-4 | 73 | 74.7 | 73.2 | 82.1 | 79.3 | 80.7 | 74.5 | 78.6 | 75 | 81.5 | 83.1 | 78.4 | 76.3 | 76.9 | 75.9 |
| E-3 | 74.2 | 75.6 | 78.6 | 79.8 | 79.2 | 79.7 | 77.6 | 78.8 | 79.6 | 79.3 | 84.2 | 85.2 | 76.5 | 77.7 | 79.6 |
| E-2 | 81.3 | 82.3 | 82.5 | 86.2 | 86.3 | 85.3 | 86.7 | 89.5 | 85 | 85.8 | 83.3 | 86.9 | 83.7 | 84.4 | 83.9 |
| E-1 | 81.1 | 80.4 | 79.1 | 87.5 | 85.7 | 84.7 | 85 | 83.3 | 83.5 | 89.2 | 85.6 | 81.1 | 83.8 | 82.5 | 81.4 |
| TOTAL ENLISTED | 80.2 | 80.4 | 79.3 | 86 | 84.5 | 84.1 | 81.5 | 82.7 | 81.4 | 84.3 | 85.2 | 84.4 | 82.3 | 82.1 | 81.3 |
| TOTAL | 82.3 | 82.6 | 81.4 | 86.3 | 85.1 | 84.5 | 82.2 | 83.4 | 82.1 | 85.8 | 86.2 | 85.2 | 83.6 | 83.5 | 82.5 |

**CONTINUATION RATES FY 1997 – FY 1999** — Table F-9
**ACTIVE DUTY PERCENTAGE CHANGES**

| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NAVY TOTAL** | | | | | | | | | | | | | | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-10 | 42.9 | 100 | 62.5 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 42.9 | 100 | 66.7 |
| O-9 | 83.3 | 78.3 | 77.8 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 78.3 | 77.8 |
| O-8 | 74.3 | 76.6 | 79.5 | 0 | 100 | 100 | 100 | 0 | 0 | 0 | 100 | 0 | 74.6 | 76.3 | 78.7 |
| O-7 | 91.2 | 88.8 | 87.4 | 66.7 | 75 | 100 | 0 | 0 | 100 | 100 | 0 | 0 | 90.6 | 88.3 | 88.1 |
| O-6 | 86.1 | 83.1 | 85.4 | 90.3 | 90.1 | 91.7 | 100 | 83.3 | 93.2 | 90.2 | 83.3 | 86.2 | 86.4 | 83.3 | 85.7 |
| O-5 | 90.9 | 89.9 | 89.6 | 94 | 93.7 | 90.8 | 95.2 | 94.2 | 91.1 | 87.8 | 89.1 | 87.8 | 91 | 90.1 | 89.6 |
| O-4 | 90.4 | 92.8 | 88.8 | 91.3 | 93.2 | 89.5 | 95.3 | 93.1 | 91.9 | 92.5 | 93.3 | 92.5 | 90.7 | 92.8 | 89.1 |
| O-3 | 87.4 | 86.2 | 85.5 | 90.7 | 89.7 | 89.1 | 88.7 | 87.3 | 85.8 | 89 | 85.5 | 84 | 87.7 | 86.5 | 85.6 |
| O-2 | 95.2 | 95.5 | 94.5 | 94.1 | 94.2 | 93.9 | 94.4 | 96.2 | 92.7 | 94.9 | 94.7 | 92.5 | 95.1 | 95.4 | 94.2 |
| O-1 | 99.4 | 98.8 | 99 | 98.8 | 98.6 | 98.9 | 98.9 | 99.2 | 98.1 | 100 | 100 | 99.2 | 99.3 | 98.9 | 99 |
| TOTAL OFFICER | 90.5 | 90.2 | 89.2 | 92.9 | 92.7 | 91.7 | 93.3 | 92.3 | 91 | 92.4 | 90.9 | 89.7 | 90.8 | 90.5 | 89.5 |
| W-4 | 65.2 | 70.5 | 74.9 | 68.6 | 76.7 | 76.2 | 66.7 | 70 | 75 | 73.3 | 82.8 | 82.1 | 66.1 | 72 | 75.8 |
| W-3 | 81.4 | 83.5 | 82.8 | 89.5 | 86.4 | 87.5 | 88.2 | 76.9 | 87.5 | 95.7 | 80.5 | 86.7 | 83.3 | 83.6 | 83.7 |
| W-2 | 94 | 93.2 | 90.8 | 94.4 | 92.6 | 95.1 | 100 | 83.3 | 100 | 96.6 | 100 | 87.5 | 94.2 | 93.3 | 91.6 |
| W-1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL WARRANT | 83 | 85 | 84.4 | 89.1 | 88.4 | 89.6 | 85.7 | 75.9 | 85.7 | 89.5 | 86.3 | 84.9 | 84.2 | 85.4 | 85.3 |
| TOTAL WARRANT & OFFICER | 90.3 | 90.1 | 89.1 | 92.6 | 92.4 | 91.5 | 93.2 | 92.1 | 90.9 | 92.3 | 90.7 | 89.5 | 90.6 | 90.3 | 89.3 |
| E-9 | 81.5 | 80.3 | 78.3 | 85.3 | 81.8 | 81.7 | 89 | 82.8 | 77.4 | 83.6 | 80 | 84 | 82.2 | 80.4 | 79.2 |
| E-8 | 85.4 | 80.9 | 80 | 88.7 | 85.2 | 85.5 | 86.4 | 82.4 | 83.2 | 84.5 | 83.4 | 78 | 85.6 | 81.6 | 80.5 |
| E-7 | 89.7 | 88.9 | 85.4 | 92.1 | 91.3 | 88.8 | 92 | 89.5 | 88.3 | 87.4 | 85.8 | 84.5 | 89.9 | 88.9 | 85.9 |
| E-6 | 89.4 | 88.7 | 86.7 | 91.1 | 89.7 | 87 | 90.5 | 90.1 | 88 | 90.2 | 91.4 | 90 | 89.8 | 89.1 | 87.1 |
| E-5 | 85.8 | 86.1 | 85.5 | 91.8 | 91.4 | 91 | 88.8 | 88.8 | 88.2 | 94.1 | 93.9 | 93.7 | 87.9 | 88 | 87.5 |
| E-4 | 74 | 76.8 | 76.9 | 81.7 | 81.8 | 81.9 | 76 | 79.4 | 78.6 | 83.9 | 85.8 | 84.3 | 76.3 | 78.6 | 78.6 |
| E-3 | 73.7 | 79.4 | 82.2 | 76.9 | 80.2 | 81.3 | 77 | 81 | 82.7 | 81.9 | 86.2 | 87.9 | 75.2 | 80.2 | 82.5 |
| E-2 | 82.4 | 83.8 | 84.8 | 80.9 | 82.6 | 83.9 | 86.5 | 87.7 | 86.9 | 87.9 | 89.1 | 89.3 | 82.9 | 84.4 | 85.2 |
| E-1 | 79.1 | 80.3 | 79.2 | 80.4 | 81.6 | 81.4 | 84.9 | 83.7 | 84.5 | 86 | 85.9 | 84.7 | 80.5 | 81.5 | 80.9 |
| TOTAL ENLISTED | 82.1 | 83.5 | 83 | 85.1 | 85.7 | 85.3 | 83 | 84.5 | 84.2 | 87.9 | 88.8 | 88.1 | 83.1 | 84.4 | 84 |
| TOTAL | 83.5 | 84.7 | 84.1 | 85.5 | 86 | 85.6 | 83.7 | 85 | 84.7 | 88.3 | 88.9 | 88.2 | 84.2 | 85.2 | 84.8 |

**CONTINUATION RATES FY 1997 – FY 1999**
**ACTIVE DUTY PERCENTAGE CHANGES**
Table F-10

| | MARINE CORPS MALE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-10 | 66.7 | 66.7 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66.7 | 66.7 | 50 |
| O-9 | 100 | 81.8 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 81.8 | 80 |
| O-8 | 90.5 | 72 | 83.3 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 90.5 | 72 | 84 |
| O-7 | 90.6 | 94.4 | 91.4 | 100 | 100 | 100 | 0 | 100 | 100 | 0 | 0 | 0 | 91.2 | 95 | 92.3 |
| O-6 | 83.9 | 84.9 | 84 | 88.2 | 95.8 | 89.3 | 90.9 | 100 | 91.7 | 100 | 100 | 50 | 84.3 | 85.7 | 84.2 |
| O-5 | 88.4 | 87.8 | 87.3 | 93.2 | 90.9 | 84.8 | 88 | 93.8 | 94.4 | 88.2 | 81.8 | 96 | 88.6 | 87.9 | 87.5 |
| O-4 | 91.3 | 91.5 | 91.6 | 94.5 | 92.6 | 92.6 | 93.3 | 89.5 | 95.6 | 94.9 | 92.8 | 89.9 | 91.6 | 91.5 | 91.7 |
| O-3 | 87.4 | 89.3 | 88.2 | 86.9 | 91 | 92.3 | 88.1 | 88.6 | 91.5 | 87.3 | 90.6 | 90.9 | 87.4 | 89.4 | 88.7 |
| O-2 | 90.7 | 92.2 | 89.4 | 93.3 | 89.1 | 89 | 94.5 | 95.1 | 86.8 | 91.1 | 90.6 | 93.1 | 91.1 | 92.1 | 89.4 |
| O-1 | 98.9 | 99 | 99.3 | 97.9 | 97.5 | 96.2 | 98.1 | 99.3 | 99.4 | 97.7 | 98.9 | 99.1 | 98.8 | 98.9 | 99 |
| TOTAL OFFICER | 90.2 | 91.2 | 90.3 | 92.6 | 92.5 | 91.9 | 93 | 93.3 | 92.9 | 91.5 | 92.4 | 93 | 90.5 | 91.4 | 90.6 |
| W-5 | 90 | 71.6 | 75 | 100 | 50 | 100 | 100 | 25 | 50 | 0 | 0 | 100 | 91 | 68.3 | 75.6 |
| W-4 | 71.5 | 82.3 | 79.3 | 80.8 | 90.3 | 75.6 | 100 | 85.7 | 81.8 | 50 | 100 | 100 | 72.8 | 83.6 | 79.1 |
| W-3 | 85.4 | 88.7 | 86.1 | 90 | 91.8 | 87.3 | 92.3 | 92.3 | 91.3 | 87.5 | 100 | 66.7 | 86.4 | 89.4 | 86.3 |
| W-2 | 95.4 | 95.3 | 98.3 | 93.9 | 98.9 | 98 | 90.9 | 87.8 | 94.1 | 94.1 | 93.8 | 100 | 94.9 | 95.2 | 98 |
| W-1 | 99.3 | 97.9 | 98.4 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 99.4 | 98.4 | 98.9 |
| TOTAL WARRANT | 89.4 | 90.6 | 90.7 | 92 | 94.9 | 91.7 | 92.8 | 88.1 | 92.6 | 89.7 | 96.3 | 94.1 | 89.9 | 91.1 | 91 |
| TOTAL WARRANT & OFFICER | 90.2 | 91.1 | 90.4 | 92.4 | 93 | 91.9 | 93 | 92.6 | 92.8 | 91.4 | 92.6 | 93.1 | 90.4 | 91.3 | 90.7 |
| E-9 | 77.6 | 76.7 | 74.1 | 80.9 | 81.1 | 84.4 | 82.6 | 78 | 75 | 81.3 | 90.3 | 85.7 | 78.9 | 78.2 | 77.2 |
| E-8 | 77.2 | 79.2 | 78.3 | 86.2 | 85.7 | 84.4 | 80.1 | 85 | 85.4 | 78.7 | 78.3 | 88.7 | 79.8 | 81.5 | 81.1 |
| E-7 | 87.5 | 87.4 | 87.3 | 89.2 | 90.4 | 88.1 | 89.2 | 87.6 | 87.3 | 85.8 | 84.8 | 85.9 | 88 | 88.1 | 87.5 |
| E-6 | 92 | 92.5 | 92.3 | 93.4 | 92.7 | 92.7 | 91.4 | 92.3 | 93.4 | 92.6 | 92.5 | 93.4 | 92.3 | 92.6 | 92.5 |
| E-5 | 81.5 | 80.9 | 75.7 | 87.5 | 88.4 | 87 | 85.5 | 83.5 | 80.7 | 86.8 | 84.6 | 80.2 | 83.3 | 82.7 | 78.4 |
| E-4 | 60.4 | 60.3 | 60.9 | 74.4 | 72.8 | 70.8 | 62.3 | 65.7 | 62 | 65.2 | 63.8 | 62.9 | 62.5 | 62.7 | 62.4 |
| E-3 | 81.7 | 83.1 | 85 | 80.3 | 83.9 | 84.7 | 84.8 | 87 | 87.7 | 84.2 | 84.6 | 88.6 | 82 | 83.8 | 85.5 |
| E-2 | 87.1 | 87.5 | 88.9 | 83.6 | 84.2 | 86.5 | 90.1 | 91.1 | 91.8 | 89.3 | 89.5 | 90 | 87.1 | 87.6 | 89 |
| E-1 | 81.4 | 81 | 82.3 | 76.7 | 78.2 | 77.8 | 87.9 | 84.7 | 85.9 | 87.4 | 81.2 | 82 | 81.8 | 81 | 82.1 |
| TOTAL ENLISTED | 79 | 79.8 | 79.7 | 83.6 | 84.5 | 84.1 | 82.2 | 83 | 81.8 | 82.3 | 81.8 | 82.3 | 80.2 | 81 | 80.8 |
| TOTAL | 80.4 | 81.2 | 81.1 | 83.9 | 84.8 | 84.5 | 82.6 | 83.4 | 82.3 | 82.9 | 82.5 | 83.1 | 81.3 | 82.1 | 81.8 |

| CONTINUATION RATES FY 1997 – FY 1999 ACTIVE DUTY PERCENTAGE CHANGES | | | | | | | | | | | | | | Table F-11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MARINE CORPS FEMALE** | | | | | | | | | | | | | | |
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-9 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 |
| O-8 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 |
| O-7 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| O-6 | 90 | 72.7 | 80 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 72.7 | 81.8 |
| O-5 | 78.6 | 84.1 | 84.3 | 100 | 100 | 83.3 | 100 | 100 | 100 | 0 | 0 | 0 | 81.3 | 86 | 84.5 |
| O-4 | 92.7 | 88.4 | 88.1 | 100 | 85.7 | 100 | 0 | 0 | 0 | 0 | 0 | 100 | 93.2 | 88.2 | 89.6 |
| O-3 | 77 | 84.3 | 84.4 | 92.3 | 100 | 92.9 | 100 | 62.5 | 57.1 | 100 | 71.4 | 100 | 79.9 | 84.2 | 84.5 |
| O-2 | 87 | 88.7 | 91.9 | 100 | 88.2 | 77.3 | 100 | 71.4 | 100 | 100 | 83.3 | 80 | 88.9 | 87.8 | 90.5 |
| O-1 | 97.9 | 97 | 96.1 | 100 | 94.7 | 91.3 | 100 | 100 | 100 | 100 | 100 | 100 | 98.2 | 97.2 | 96.1 |
| TOTAL OFFICER | 87.9 | 89.1 | 89.8 | 98.2 | 93.8 | 88.2 | 100 | 80.8 | 90.3 | 100 | 88.9 | 96.9 | 89.4 | 89.2 | 90 |
| W-5 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 100 | 50 | 0 | 0 | 0 | 100 | 100 | 80 |
| W-4 | 66.7 | 53.8 | 57.1 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 0 | 75 | 64.7 | 55.6 |
| W-3 | 90.9 | 81.8 | 84.6 | 100 | 100 | 100 | 33.3 | 50 | 0 | 0 | 100 | 0 | 82.8 | 82.8 | 81.8 |
| W-2 | 100 | 97.6 | 81.8 | 100 | 100 | 100 | 88.9 | 77.8 | 85.7 | 100 | 100 | 100 | 98.4 | 95.2 | 87.3 |
| W-1 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 0 | 100 | 100 | 100 | 100 |
| TOTAL WARRANT | 92.9 | 86.4 | 82.2 | 100 | 100 | 100 | 82.4 | 78.6 | 63.6 | 83.3 | 100 | 83.3 | 92 | 88.2 | 84.5 |
| TOTAL WARRANT & OFFICER | 88.6 | 88.8 | 89 | 98.6 | 95.2 | 91.2 | 91.7 | 80 | 83.3 | 94.4 | 90.3 | 94.7 | 89.9 | 89.1 | 89.2 |
| E-9 | 100 | 71.4 | 87.5 | 71.4 | 100 | 100 | 100 | 100 | 50 | 0 | 0 | 0 | 89.5 | 82.6 | 88.9 |
| E-8 | 74 | 80.8 | 81.9 | 86.1 | 92.3 | 76 | 71.4 | 80 | 94.4 | 100 | 100 | 100 | 78.2 | 84.6 | 82.1 |
| E-7 | 90.8 | 86.1 | 90 | 98.7 | 87.5 | 91.5 | 89.4 | 87 | 97 | 84.6 | 100 | 76.5 | 93.1 | 87.2 | 90.6 |
| E-6 | 87.3 | 91.9 | 89.6 | 94.5 | 91.8 | 91.3 | 93 | 94 | 96 | 93.8 | 82.1 | 94.1 | 90.7 | 91.6 | 91.1 |
| E-5 | 76.5 | 77.3 | 76.3 | 87.7 | 86.3 | 84.8 | 87.9 | 84.8 | 81.3 | 89.7 | 85 | 87.2 | 82.5 | 81.9 | 80.3 |
| E-4 | 70.3 | 63.3 | 67.7 | 77.6 | 75 | 72.4 | 72.9 | 72.5 | 69.8 | 74.7 | 67.7 | 73.2 | 72.4 | 67.3 | 69.2 |
| E-3 | 81.4 | 82.9 | 84.9 | 84.4 | 86.9 | 87.1 | 88.8 | 89.9 | 89.8 | 83.5 | 83.1 | 89.4 | 83 | 84.7 | 86.4 |
| E-2 | 84.7 | 85.9 | 85.9 | 86.2 | 86.9 | 90.4 | 87.9 | 92.4 | 92.7 | 85.9 | 93.2 | 89.7 | 85.5 | 87.3 | 88 |
| E-1 | 79.5 | 70.3 | 77.3 | 81.3 | 75.9 | 90.4 | 81.7 | 76.8 | 86.5 | 78.6 | 83.3 | 78.5 | 80.1 | 72.7 | 80.9 |
| TOTAL ENLISTED | 80 | 78.6 | 80.3 | 86.6 | 85.1 | 85.7 | 85 | 84.9 | 84.9 | 83.6 | 82.7 | 84.9 | 82.4 | 81.2 | 82.5 |
| TOTAL | 81 | 79.8 | 81.3 | 87 | 85.4 | 86 | 85.2 | 84.7 | 84.8 | 84.1 | 83.2 | 85.5 | 83.1 | 81.9 | 83.1 |

| CONTINUATION RATES FY 1997 – FY 1999 | | | | | | | | | | | | | | Table F-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ACTIVE DUTY PERCENTAGE CHANGES | | | | | | | | | | | | | | |
| MARINE CORPS TOTAL | | | | | | | | | | | | | | |
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-10 | 66.7 | 66.7 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66.7 | 66.7 | 50 |
| O-9 | 100 | 83.3 | 72.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 83.3 | 72.7 |
| O-8 | 90.5 | 72 | 83.3 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 90.5 | 72 | 84 |
| O-7 | 90.6 | 94.4 | 91.7 | 100 | 100 | 100 | 0 | 100 | 100 | 0 | 0 | 0 | 91.2 | 95 | 92.5 |
| O-6 | 84 | 84.6 | 84 | 88.2 | 95.8 | 89.7 | 90.9 | 100 | 91.7 | 100 | 100 | 50 | 84.3 | 85.4 | 84.2 |
| O-5 | 88.2 | 87.7 | 87.2 | 93.7 | 91.5 | 84.7 | 88.5 | 93.9 | 94.6 | 88.2 | 81.8 | 96 | 88.4 | 87.9 | 87.4 |
| O-4 | 91.4 | 91.4 | 91.5 | 94.9 | 92.3 | 93.1 | 93.3 | 89.5 | 95.6 | 94.9 | 92.8 | 90.1 | 91.6 | 91.4 | 91.6 |
| O-3 | 87.1 | 89.2 | 88.1 | 87.2 | 91.5 | 92.3 | 88.5 | 87.6 | 90.5 | 87.6 | 89.8 | 91.3 | 87.2 | 89.3 | 88.5 |
| O-2 | 90.5 | 91.9 | 89.6 | 93.7 | 89 | 87.9 | 94.8 | 94.2 | 87.6 | 91.6 | 90.1 | 92.5 | 90.9 | 91.8 | 89.5 |
| O-1 | 98.9 | 98.9 | 99 | 98.1 | 97.3 | 95.7 | 98.2 | 99.3 | 99.4 | 97.8 | 99.1 | 99.2 | 98.7 | 98.8 | 98.7 |
| TOTAL OFFICER | 90.2 | 91.1 | 90.3 | 92.9 | 92.6 | 91.6 | 93.2 | 92.8 | 92.8 | 91.8 | 92.2 | 93.3 | 90.5 | 91.3 | 90.6 |
| W-5 | 90 | 72 | 75.3 | 100 | 60 | 100 | 100 | 40 | 50 | 0 | 0 | 100 | 91.2 | 69.4 | 75.8 |
| W-4 | 71.2 | 80.3 | 78.5 | 81.5 | 90.9 | 76.2 | 100 | 88.9 | 75 | 50 | 100 | 100 | 72.9 | 82.3 | 78.2 |
| W-3 | 85.7 | 88.3 | 86 | 90.5 | 92.3 | 88.3 | 86.2 | 89.3 | 87.5 | 77.8 | 100 | 57.1 | 86.2 | 89.1 | 86 |
| W-2 | 95.7 | 95.5 | 97.4 | 94.5 | 99 | 98.2 | 90.6 | 86.2 | 93.1 | 95.5 | 94.7 | 100 | 95.2 | 95.2 | 97.3 |
| W-1 | 99.4 | 97.9 | 98.5 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 99.5 | 98.5 | 99 |
| TOTAL WARRANT | 89.6 | 90.4 | 90.3 | 92.6 | 95.4 | 92.5 | 91.2 | 87 | 89.9 | 88.6 | 96.8 | 92.5 | 90 | 90.9 | 90.6 |
| TOTAL WARRANT & OFFICER | 90.1 | 91 | 90.3 | 92.8 | 93.1 | 91.8 | 92.9 | 92 | 92.4 | 91.5 | 92.5 | 93.2 | 90.4 | 91.2 | 90.6 |
| E-9 | 77.9 | 76.6 | 74.3 | 80.7 | 81.5 | 84.8 | 83 | 78.4 | 74.5 | 81.3 | 90.3 | 85.7 | 79 | 78.3 | 77.5 |
| E-8 | 77.1 | 79.3 | 78.5 | 86.2 | 86 | 84 | 79.9 | 84.8 | 86 | 79.3 | 78.9 | 89.2 | 79.8 | 81.6 | 81.2 |
| E-7 | 87.7 | 87.4 | 87.4 | 89.9 | 90.1 | 88.4 | 89.2 | 87.6 | 87.7 | 85.8 | 85.8 | 85.2 | 88.3 | 88.1 | 87.6 |
| E-6 | 91.8 | 92.5 | 92.2 | 93.4 | 92.6 | 92.6 | 91.5 | 92.4 | 93.5 | 92.7 | 91.9 | 93.4 | 92.2 | 92.5 | 92.4 |
| E-5 | 81.3 | 80.7 | 75.7 | 87.6 | 88.2 | 86.8 | 85.7 | 83.5 | 80.7 | 87 | 84.7 | 80.8 | 83.3 | 82.7 | 78.5 |
| E-4 | 60.8 | 60.5 | 61.3 | 74.7 | 73 | 71 | 62.9 | 66.1 | 62.5 | 65.9 | 64.1 | 63.7 | 63 | 63 | 62.8 |
| E-3 | 81.7 | 83.1 | 85 | 80.6 | 84.1 | 84.9 | 85 | 87.1 | 87.8 | 84.2 | 84.5 | 88.7 | 82.1 | 83.8 | 85.6 |
| E-2 | 87 | 87.5 | 88.7 | 83.8 | 84.5 | 86.9 | 89.9 | 91.1 | 91.9 | 89.1 | 89.8 | 90 | 87 | 87.6 | 88.9 |
| E-1 | 81.3 | 80.4 | 82.1 | 76.9 | 78 | 78.6 | 87.6 | 84.2 | 85.9 | 87 | 81.3 | 81.7 | 81.7 | 80.6 | 82.1 |
| TOTAL ENLISTED | 79.1 | 79.7 | 79.7 | 83.8 | 84.5 | 84.3 | 82.3 | 83.1 | 82 | 82.4 | 81.9 | 82.5 | 80.3 | 81 | 80.9 |
| TOTAL | 80.5 | 81.2 | 81.1 | 84.2 | 84.9 | 84.6 | 82.7 | 83.5 | 82.4 | 83 | 82.6 | 83.3 | 81.4 | 82.1 | 81.9 |

## CONTINUATION RATES FY 1997 – FY 1999
### ACTIVE DUTY PERCENTAGE CHANGES

Table F-13

| | AIR FORCE MALE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-10 | 50 | 70 | 77.8 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 72.7 | 80 |
| O-9 | 64.7 | 82.9 | 76.3 | 66.7 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 64.9 | 83.3 | 76.9 |
| O-8 | 75.9 | 86.8 | 88.3 | 0 | 100 | 100 | 50 | 100 | 50 | 100 | 100 | 50 | 75.6 | 87.5 | 86.7 |
| O-7 | 83.7 | 92.2 | 90 | 100 | 80 | 100 | 100 | 50 | 0 | 100 | 50 | 100 | 85.1 | 90 | 89.6 |
| O-6 | 80.7 | 81.1 | 84.6 | 83.9 | 93.2 | 88.6 | 85.4 | 76.7 | 87.2 | 83.7 | 84.3 | 88.8 | 80.9 | 81.4 | 84.9 |
| O-5 | 87.3 | 86.9 | 87.8 | 91.5 | 90.7 | 88.9 | 92 | 87.6 | 86.1 | 88.1 | 87.6 | 86.9 | 87.7 | 87.2 | 87.8 |
| O-4 | 90 | 91.2 | 91.8 | 89.8 | 89.1 | 92.3 | 89 | 87.2 | 91.9 | 86.6 | 90.5 | 93.4 | 89.9 | 91 | 91.9 |
| O-3 | 91.6 | 90.4 | 89.7 | 91.3 | 90.9 | 90.3 | 92 | 89.1 | 91.2 | 91.8 | 89.4 | 90.9 | 91.6 | 90.4 | 89.8 |
| O-2 | 95.3 | 96.1 | 96.1 | 93.9 | 95.3 | 96.4 | 97.4 | 95.5 | 96.7 | 96 | 94.3 | 95.1 | 95.4 | 95.9 | 96 |
| O-1 | 99.1 | 98.9 | 99.2 | 98.7 | 97.5 | 98.7 | 99.3 | 100 | 100 | 99.5 | 99.5 | 99.8 | 99.1 | 98.9 | 99.2 |
| TOTAL OFFICER | 90.9 | 90.7 | 91 | 91.7 | 91.6 | 91.9 | 92.2 | 89.8 | 91.6 | 92.4 | 91.6 | 93 | 91 | 90.8 | 91.1 |
| E-9 | 79.2 | 76.6 | 79.5 | 83.5 | 81.8 | 80.1 | 81 | 70.3 | 87.5 | 75 | 83.5 | 81.1 | 79.9 | 77.5 | 79.9 |
| E-8 | 80.7 | 81.2 | 82.4 | 79 | 82.5 | 85 | 83.3 | 81.9 | 77.8 | 71.2 | 81.3 | 84.6 | 80.2 | 81.4 | 82.8 |
| E-7 | 85.2 | 84.4 | 84 | 85.2 | 84.3 | 84.5 | 84.5 | 83.4 | 81.4 | 81.6 | 83.1 | 84.8 | 85 | 84.3 | 84.3 |
| E-6 | 92.8 | 91.5 | 92.6 | 93.1 | 91.6 | 91.5 | 91.9 | 89.8 | 89.4 | 91.4 | 89.1 | 90.5 | 92.8 | 91.4 | 92.2 |
| E-5 | 95.1 | 94.3 | 94 | 96.4 | 95.8 | 95.3 | 95.3 | 94.2 | 94.2 | 96.4 | 95.3 | 94.9 | 95.4 | 94.5 | 94.3 |
| E-4 | 79.1 | 78.9 | 78.5 | 84.2 | 83.7 | 83.8 | 81.4 | 78.6 | 78.9 | 83.8 | 83 | 80.5 | 79.9 | 79.6 | 79.3 |
| E-3 | 89.7 | 90.7 | 92.9 | 88.9 | 90.5 | 90.5 | 92.5 | 92.7 | 94.7 | 92.9 | 93.3 | 96 | 89.9 | 91 | 92.8 |
| E-2 | 91.8 | 92.2 | 92.7 | 87.8 | 88.4 | 89.2 | 94.3 | 94 | 92.7 | 92.6 | 94.7 | 92.5 | 91.5 | 91.9 | 92.1 |
| E-1 | 86.3 | 85.4 | 86.9 | 81 | 80.8 | 80.3 | 88.1 | 81.9 | 84.9 | 76.5 | 86 | 83.8 | 85.2 | 84.5 | 85.6 |
| TOTAL ENLISTED | 88 | 87.8 | 88.3 | 89.8 | 89.4 | 89.4 | 89.7 | 87.9 | 88.2 | 88.9 | 89.5 | 89.4 | 88.4 | 88.1 | 88.5 |
| TOTAL | 88.7 | 88.4 | 88.9 | 89.9 | 89.5 | 89.6 | 89.9 | 88.1 | 88.5 | 89.7 | 90 | 90.2 | 88.9 | 88.6 | 89 |

## CONTINUATION RATES FY 1997 – FY 1999
### ACTIVE DUTY PERCENTAGE CHANGES
Table F-14

| | AIR FORCE FEMALE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| O-8 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 100 | 100 |
| O-7 | 100 | 75 | 100 | 0 | 100 | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 100 | 80 | 100 |
| O-6 | 87.4 | 85.7 | 87 | 100 | 93.3 | 78.9 | 85.7 | 88.9 | 88.9 | 90.5 | 90 | 73.7 | 88.2 | 86.7 | 85.6 |
| O-5 | 88.9 | 89.4 | 86.2 | 91.4 | 87.6 | 91.2 | 95.5 | 92.9 | 94.1 | 83.3 | 83.9 | 84.2 | 89.1 | 89.1 | 86.9 |
| O-4 | 89.3 | 91.4 | 88.2 | 88.9 | 90.5 | 87.9 | 89.5 | 98.5 | 86.6 | 84.4 | 89.2 | 89.7 | 89 | 91.4 | 88.2 |
| O-3 | 88 | 87.6 | 85.7 | 93.1 | 90.4 | 92.5 | 85.1 | 92.7 | 83.3 | 90.5 | 91.9 | 86.6 | 88.6 | 88.3 | 86.5 |
| O-2 | 90.3 | 89.1 | 89.9 | 93.7 | 94.7 | 92.9 | 92.3 | 94.4 | 91.3 | 95.4 | 91.7 | 89.5 | 91 | 89.9 | 90.2 |
| O-1 | 97.4 | 98.1 | 98.3 | 99.2 | 99.4 | 98.2 | 95.2 | 94.7 | 100 | 98.2 | 97.6 | 98.9 | 97.6 | 98.2 | 98.4 |
| TOTAL OFFICER | 89.8 | 89.8 | 88.2 | 92.6 | 91.8 | 92.1 | 88.8 | 94.5 | 87.9 | 91.5 | 92.1 | 89.7 | 90.2 | 90.3 | 88.8 |
| E-9 | 84.2 | 87.1 | 76.8 | 89.4 | 80 | 83.9 | 90 | 54.5 | 75 | 85.7 | 90 | 92.3 | 85.5 | 84.4 | 78.9 |
| E-8 | 82.5 | 83.8 | 84.1 | 86.5 | 88.2 | 84.5 | 91.3 | 85.7 | 86.2 | 85.7 | 82.1 | 77.8 | 83.8 | 84.8 | 84 |
| E-7 | 85.7 | 81.6 | 82.1 | 88.9 | 86.1 | 85.1 | 88.2 | 84.7 | 84.3 | 86.7 | 85.9 | 88.6 | 86.8 | 83.3 | 83.4 |
| E-6 | 91.2 | 89.2 | 89 | 95.6 | 89.2 | 89.6 | 97.7 | 84.4 | 84.5 | 92.2 | 87.9 | 92.3 | 92.9 | 88.9 | 89.2 |
| E-5 | 93 | 91.8 | 91.5 | 96.1 | 95.2 | 94.3 | 93.2 | 92.7 | 90.7 | 94.9 | 91.8 | 91.6 | 94 | 92.9 | 92.3 |
| E-4 | 78.8 | 77.7 | 76.5 | 83.9 | 85.4 | 84.1 | 82.7 | 80 | 77.4 | 80.4 | 82.8 | 81.2 | 80.1 | 79.7 | 78.5 |
| E-3 | 87.7 | 89.8 | 89.1 | 90.4 | 90.6 | 92.1 | 90.6 | 90.8 | 93.3 | 91.5 | 92.4 | 93.8 | 88.7 | 90.2 | 90.5 |
| E-2 | 91.3 | 91.1 | 89.9 | 91.6 | 92.2 | 90.9 | 96.4 | 93.6 | 93.7 | 94.3 | 92.6 | 93.6 | 91.9 | 91.6 | 90.7 |
| E-1 | 87.5 | 86.4 | 84.1 | 90.3 | 90.3 | 86.4 | 88.9 | 91.2 | 83.8 | 79.5 | 87.1 | 89.9 | 87.7 | 87.8 | 85 |
| TOTAL ENLISTED | 86.3 | 85.8 | 85.1 | 90.7 | 89.9 | 89.4 | 89.8 | 87.7 | 86.9 | 88.3 | 88.6 | 89.1 | 87.6 | 87.1 | 86.5 |
| TOTAL | 87.1 | 86.7 | 85.8 | 90.8 | 90.1 | 89.6 | 89.7 | 88.2 | 87 | 89.1 | 89.4 | 89.2 | 88.1 | 87.7 | 86.9 |

| CONTINUATION RATES FY 1997 – FY 1999 ACTIVE DUTY PERCENTAGE CHANGES | | | | | | | | | | | | | | Table F-15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AIR FORCE TOTAL** | | | | | | | | | | | | | | |
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-10 | 50 | 70 | 77.8 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 72.7 | 80 |
| O-9 | 64.7 | 82.9 | 76.3 | 66.7 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 64.9 | 83.3 | 76.9 |
| O-8 | 75.9 | 86.8 | 88.6 | 0 | 100 | 100 | 50 | 100 | 50 | 100 | 100 | 66.7 | 74.7 | 87.7 | 87.2 |
| O-7 | 84.3 | 91.7 | 90.2 | 100 | 83.3 | 100 | 100 | 50 | 0 | 100 | 50 | 100 | 85.6 | 89.7 | 89.9 |
| O-6 | 81 | 81.3 | 84.8 | 85.3 | 93.2 | 87.3 | 85.4 | 78.8 | 87.5 | 85 | 85.4 | 85.9 | 81.3 | 81.8 | 85 |
| O-5 | 87.5 | 87.2 | 87.6 | 91.5 | 90.1 | 89.4 | 92.3 | 88.2 | 87.1 | 87.6 | 87.1 | 86.5 | 87.8 | 87.4 | 87.7 |
| O-4 | 89.9 | 91.2 | 91.3 | 89.5 | 89.4 | 91 | 89.1 | 89.1 | 90.9 | 86.2 | 90.2 | 92.7 | 89.8 | 91 | 91.3 |
| O-3 | 91 | 90 | 89 | 91.9 | 90.8 | 91.1 | 90.8 | 89.7 | 89.8 | 91.5 | 90 | 89.8 | 91.1 | 90 | 89.2 |
| O-2 | 94.3 | 94.6 | 94.8 | 93.8 | 95.1 | 95.1 | 96.9 | 95.4 | 96 | 95.9 | 93.6 | 93.8 | 94.4 | 94.6 | 94.8 |
| O-1 | 98.7 | 98.8 | 99 | 98.9 | 98.1 | 98.5 | 98.7 | 99.4 | 100 | 99.2 | 99.1 | 99.6 | 98.8 | 98.8 | 99 |
| TOTAL OFFICER | 90.7 | 90.6 | 90.5 | 92 | 91.7 | 92 | 91.7 | 90.5 | 91 | 92.2 | 91.7 | 92.3 | 90.9 | 90.7 | 90.7 |
| E-9 | 79.5 | 77.4 | 79.3 | 84 | 81.6 | 80.5 | 82 | 68.6 | 86.5 | 75.8 | 84.3 | 82.8 | 80.3 | 78.1 | 79.8 |
| E-8 | 80.9 | 81.4 | 82.6 | 79.9 | 83.3 | 84.9 | 84 | 82.3 | 78.9 | 73.2 | 81.4 | 83.6 | 80.6 | 81.8 | 82.9 |
| E-7 | 85.2 | 84.1 | 83.8 | 85.8 | 84.6 | 85.8 | 84.9 | 83.5 | 81.7 | 82.1 | 83.4 | 85.3 | 85.2 | 84.1 | 84.2 |
| E-6 | 92.6 | 91.3 | 92.2 | 93.5 | 91.1 | 91.1 | 92.5 | 89.2 | 88.9 | 91.5 | 89 | 90.7 | 92.8 | 91.1 | 91.8 |
| E-5 | 94.9 | 94 | 93.7 | 96.4 | 95.6 | 95 | 95.1 | 94 | 93.7 | 96.2 | 94.8 | 94.4 | 95.2 | 94.3 | 94 |
| E-4 | 79 | 78.7 | 78.1 | 84.1 | 84.2 | 83.9 | 81.7 | 78.9 | 78.6 | 83 | 83 | 80.7 | 80 | 79.7 | 79.1 |
| E-3 | 89.3 | 90.5 | 92 | 89.4 | 90.5 | 91.1 | 92 | 92.2 | 94.4 | 92.5 | 93.1 | 95.3 | 89.6 | 90.8 | 92.2 |
| E-2 | 91.7 | 91.9 | 92.1 | 89.1 | 89.8 | 89.8 | 94.8 | 93.9 | 93 | 93.1 | 94.1 | 92.9 | 91.6 | 91.8 | 91.8 |
| E-1 | 86.6 | 85.6 | 86.3 | 84 | 84.2 | 82.3 | 88.3 | 84.3 | 84.7 | 77.3 | 86.3 | 85.6 | 85.8 | 85.3 | 85.4 |
| TOTAL ENLISTED | 87.8 | 87.5 | 87.8 | 90 | 89.5 | 89.4 | 89.7 | 87.9 | 87.9 | 88.8 | 89.3 | 89.3 | 88.3 | 87.9 | 88.1 |
| TOTAL | 88.4 | 88.2 | 88.4 | 90.1 | 89.7 | 89.6 | 89.9 | 88.1 | 88.2 | 89.5 | 89.8 | 90 | 88.8 | 88.5 | 88.7 |

**CONTINUATION RATES FY 1997 – FY 1999**
**ACTIVE DUTY PERCENTAGE CHANGES**
Table F-16

| | COAST GUARD MALE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-10 | 100 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 100 |
| O-9 | 75 | 75 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 | 75 | 100 |
| O-8 | 64.3 | 76.9 | 85.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64.3 | 76.9 | 85.7 |
| O-7 | 100 | 100 | 90 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 90.9 |
| O-6 | 75.1 | 77.6 | 85.9 | 100 | 100 | 100 | 100 | 100 | 75 | 100 | 100 | 100 | 76 | 78.8 | 86.3 |
| O-5 | 87.9 | 91.1 | 89.3 | 93.3 | 85.7 | 75 | 87.5 | 100 | 86.7 | 91.7 | 66.7 | 75 | 88.1 | 90.8 | 88.9 |
| O-4 | 91.5 | 93.9 | 93.4 | 100 | 87.5 | 86.7 | 88.9 | 100 | 94.7 | 90.9 | 92.9 | 89.5 | 91.6 | 93.9 | 93.3 |
| O-3 | 93.5 | 94.3 | 91.8 | 95.9 | 96.6 | 95.4 | 97.2 | 93.6 | 94.9 | 93.5 | 98.4 | 95.7 | 93.8 | 94.5 | 92.2 |
| O-2 | 92.2 | 91.9 | 90.3 | 83.7 | 90.5 | 88.7 | 92.5 | 87.2 | 95.8 | 89.4 | 81.3 | 100 | 91.6 | 91 | 98.7 |
| O-1 | 99.1 | 99.4 | 98.9 | 96.9 | 100 | 100 | 96 | 100 | 95.8 | 91.4 | 100 | 100 | 98.2 | 99.5 | 98.9 |
| TOTAL OFFICER | 91.2 | 92.6 | 91.8 | 92.7 | 94.4 | 92.6 | 94.5 | 94.2 | 90.6 | 91.7 | 91.7 | 93.8 | 91.3 | 92.7 | 91.8 |
| W-4 | 73.3 | 74.7 | 78.7 | 100 | 71.4 | 33.3 | 100 | 66.7 | 50 | 73.3 | 91.7 | 76.9 | 74 | 75.2 | 77.6 |
| W-3 | 89.7 | 90.2 | 88.3 | 75 | 91.7 | 90.9 | 75 | 90 | 81.8 | 85.7 | 66.7 | 83.3 | 89 | 89.7 | 88.2 |
| W-2 | 95.4 | 94.1 | 91.8 | 90.5 | 94.3 | 93.3 | 88.2 | 100 | 100 | 100 | 100 | 100 | 95 | 94.5 | 92.5 |
| TOTAL WARRANT | 87.9 | 88.2 | 87.4 | 87.2 | 90.7 | 87.1 | 84.4 | 94.9 | 93.8 | 81.8 | 84.4 | 87.5 | 87.7 | 88.4 | 87.6 |
| TOTAL OFFICERS | 90.4 | 91.6 | 90.8 | 91.6 | 93.6 | 91.2 | 92.9 | 94.3 | 91.1 | 90.1 | 90.5 | 92.8 | 90.5 | 91.7 | 90.9 |
| E-9 | 82 | 77.9 | 81.7 | 92.9 | 71.4 | 81.8 | 100 | 62.5 | 100 | 69.2 | 75 | 84.6 | 82.2 | 77 | 82.3 |
| E-8 | 85.4 | 84.8 | 85.4 | 88.5 | 84.6 | 92.3 | 94.4 | 93.8 | 86.7 | 72.2 | 93.8 | 83.3 | 85.4 | 85.4 | 85.7 |
| E-7 | 90.1 | 90.1 | 89.4 | 92.3 | 88.4 | 85.5 | 94.4 | 90.5 | 92.9 | 84.5 | 84.6 | 91.9 | 90.3 | 89.8 | 89.3 |
| E-6 | 93.5 | 93.7 | 92.1 | 92.3 | 88 | 92.7 | 93.2 | 90.7 | 93.8 | 96.1 | 91.6 | 91.7 | 93.4 | 93.1 | 92.2 |
| E-5 | 92.3 | 91.3 | 90.6 | 93 | 95.3 | 92.8 | 95 | 96 | 92.7 | 90.9 | 92 | 91.3 | 92.5 | 92 | 90.9 |
| E-4 | 83.7 | 84.7 | 82.6 | 87.7 | 85.2 | 87.9 | 88.8 | 85.9 | 84.3 | 87 | 88.8 | 84.1 | 84.6 | 85.2 | 83.2 |
| E-3 | 86 | 89 | 88.3 | 87.2 | 91.6 | 85.5 | 89.7 | 87.8 | 88.2 | 81.1 | 89.4 | 83.1 | 86 | 89 | 87.8 |
| E-2 | 89.3 | 89.5 | 89.4 | 84.4 | 87.1 | 82.3 | 88 | 90.5 | 85.7 | 85.8 | 85.7 | 85.1 | 88.7 | 89.2 | 88.4 |
| E-1 | 88 | 83.8 | 83.9 | 66.7 | 86.4 | 80.6 | 73.5 | 93 | 92.9 | 70.6 | 84 | 75.9 | 84.6 | 84.8 | 83.7 |
| TOTAL ENLISTED | 89.1 | 89.3 | 88.2 | 90.1 | 89.4 | 89.1 | 90.8 | 89.9 | 88.8 | 86.7 | 89 | 86.6 | 89.2 | 89.3 | 88.2 |
| TOTAL | 89.4 | 89.8 | 88.8 | 90.3 | 89.9 | 89.4 | 91 | 90.4 | 89.1 | 87.2 | 89.3 | 87.6 | 89.5 | 89.8 | 88.8 |

| CONTINUATION RATES FY 1997 – FY 1999 ACTIVE DUTY PERCENTAGE CHANGES | | | | | | | | | | | | | | Table F-17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COAST GUARD FEMALE | | | | | | | | | | | | | | |
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-6 | 100 | 80 | 83.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 80 | 83.3 |
| O-5 | 94.1 | 93.1 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 94.1 | 93.3 | 100 |
| O-4 | 98.4 | 95.7 | 98.7 | 100 | 100 | 100 | 66.7 | 50 | 100 | 100 | 0 | 100 | 97.1 | 94.7 | 98.8 |
| O-3 | 91.3 | 95.5 | 92.1 | 100 | 85.7 | 88.9 | 80 | 100 | 83.3 | 90.9 | 80 | 100 | 91.4 | 94.2 | 91.9 |
| O-2 | 87.3 | 88.7 | 87.7 | 62.5 | 100 | 94.1 | 100 | 92.3 | 91.7 | 100 | 94.1 | 90 | 87.4 | 90.1 | 88.7 |
| O-1 | 96.6 | 97.5 | 94.4 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 97.5 | 98.3 | 95.9 |
| TOTAL OFFICER | 92.3 | 93.4 | 92.6 | 90.3 | 97.2 | 94.9 | 91.3 | 92.6 | 93.8 | 97.1 | 92.9 | 95.1 | 92.4 | 93.5 | 93 |
| W-4 | 100 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 100 | 100 | 100 | 100 |
| W-3 | 90.9 | 80 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90.9 | 80 | 80 |
| W-2 | 90 | 100 | 90.9 | 100 | 100 | 100 | 100 | 0 | 0 | 100 | 100 | 100 | 92.9 | 95.5 | 93.3 |
| TOTAL WARRANT | 90.9 | 92.9 | 90.3 | 100 | 100 | 100 | 100 | 0 | 0 | 100 | 100 | 100 | 92.6 | 91.4 | 92.5 |
| TOTAL WARRANT & OFFICER | 92.2 | 93.3 | 92.5 | 90.9 | 97.4 | 95.5 | 91.7 | 89.3 | 93.8 | 97.2 | 93.3 | 95.6 | 92.4 | 93.4 | 92.9 |
| E-9 | 100 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 100 |
| E-8 | 72.7 | 100 | 86.7 | 100 | 100 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 75 | 100 | 82.4 |
| E-7 | 88.2 | 96.6 | 88.3 | 80 | 88.2 | 94.4 | 71.4 | 100 | 100 | 0 | 100 | 100 | 86 | 95.5 | 89.9 |
| E-6 | 92.8 | 96.1 | 87.1 | 93.8 | 91.4 | 86.3 | 100 | 85.7 | 95.5 | 90.9 | 100 | 90.9 | 93.4 | 94.5 | 87.4 |
| E-5 | 92.5 | 90 | 86.2 | 95.3 | 94.1 | 94.5 | 87.5 | 100 | 84.6 | 79.2 | 88.2 | 87.5 | 92.2 | 91.4 | 88 |
| E-4 | 80.2 | 81.6 | 80.1 | 85.7 | 89.3 | 90.7 | 84.4 | 82.6 | 85.9 | 76.3 | 87.5 | 89.1 | 80.9 | 82.9 | 82.3 |
| E-3 | 82.5 | 81.5 | 82.5 | 91.2 | 90.6 | 81.4 | 81.4 | 81.4 | 91.3 | 77.4 | 97 | 90.6 | 82.7 | 83.2 | 83.8 |
| E-2 | 83.4 | 82.2 | 86.6 | 87.5 | 91.4 | 68.2 | 73.9 | 88.1 | 87.5 | 89.7 | 84.2 | 92.3 | 83.3 | 83.9 | 85.9 |
| E-1 | 78.2 | 75.3 | 89.3 | 88.9 | 100 | 50 | 100 | 88.9 | 75 | 50 | 100 | 75 | 78.9 | 79.1 | 86.5 |
| TOTAL ENLISTED | 85.2 | 85.6 | 84.2 | 90.9 | 91.6 | 87.8 | 83 | 87 | 88.5 | 81 | 89.9 | 89.5 | 85.7 | 86.8 | 85.3 |
| TOTAL | 86.6 | 87.2 | 85.9 | 90.9 | 92.2 | 88.6 | 84 | 87.3 | 89.2 | 84.2 | 90.7 | 90.8 | 86.9 | 88.1 | 86.8 |

## CONTINUATION RATES FY 1997 – FY 1999          Table F-18
### ACTIVE DUTY PERCENTAGE CHANGES

| | COAST GUARD TOTAL | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-10 | 100 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 100 |
| O-9 | 75 | 75 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 | 75 | 100 |
| O-8 | 64.3 | 76.9 | 85.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64.3 | 76.9 | 85.7 |
| O-7 | 100 | 100 | 90 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 90.9 |
| O-6 | 75.5 | 77.6 | 85.8 | 100 | 100 | 100 | 100 | 100 | 75 | 100 | 100 | 100 | 76.3 | 78.8 | 86.3 |
| O-5 | 88.1 | 91.2 | 89.8 | 93.3 | 85.7 | 75 | 87.5 | 100 | 86.7 | 91.7 | 70 | 77.8 | 88.3 | 90.9 | 89.4 |
| O-4 | 91.9 | 94 | 93.8 | 100 | 89.5 | 88.9 | 85.7 | 94.7 | 95 | 91.7 | 92.9 | 90.9 | 91.9 | 93.9 | 93.7 |
| O-3 | 93.3 | 94.4 | 91.8 | 96.5 | 95.5 | 94.6 | 96.1 | 93.9 | 94 | 93.2 | 95.9 | 96 | 93.6 | 94.4 | 92.2 |
| O-2 | 91.4 | 91.3 | 89.8 | 80.7 | 92.5 | 90 | 93.8 | 88.5 | 82.7 | 91.1 | 84.6 | 91.2 | 91 | 90.8 | 89.5 |
| O-1 | 98.6 | 99.1 | 98 | 97.8 | 100 | 100 | 96.9 | 100 | 97.3 | 93.8 | 100 | 100 | 98 | 99.3 | 98.3 |
| TOTAL OFFICER | 91.3 | 92.6 | 91.8 | 92.3 | 94.9 | 93 | 94.1 | 94 | 91 | 92.6 | 91.9 | 94 | 91.4 | 92.8 | 92 |
| W-4 | 73.4 | 74.9 | 78.9 | 100 | 71.4 | 33.3 | 100 | 66.7 | 50 | 75 | 92.3 | 78.6 | 74.1 | 75.5 | 78 |
| W-3 | 89.7 | 90 | 88.2 | 75 | 91.7 | 90.9 | 75 | 90 | 81.8 | 85.7 | 66.7 | 83.3 | 89 | 89.5 | 88.1 |
| W-2 | 95.3 | 94.3 | 91.8 | 91.3 | 94.7 | 94 | 88.9 | 96.3 | 100 | 100 | 100 | 100 | 94.9 | 94.5 | 92.5 |
| TOTAL WARRANT | 88 | 88.3 | 87.5 | 87.8 | 91.2 | 88.1 | 84.8 | 92.5 | 93.3 | 82.9 | 85.7 | 88.9 | 87.8 | 88.5 | 87.7 |
| TOTAL OFFICERS | 90.6 | 91.7 | 90.9 | 91.5 | 94.1 | 91.9 | 92.8 | 93.7 | 91.4 | 91.2 | 91.1 | 93.3 | 90.7 | 91.8 | 91.1 |
| E-9 | 82.2 | 78.2 | 82.1 | 92.9 | 71.4 | 81.8 | 100 | 62.5 | 100 | 69.2 | 75 | 84.6 | 82.4 | 77.2 | 82.7 |
| E-8 | 85.1 | 85.2 | 85.4 | 88.9 | 85.2 | 89.3 | 94.4 | 93.8 | 86.7 | 72.2 | 93.8 | 83.3 | 85.2 | 85.7 | 85.6 |
| E-7 | 90 | 90.3 | 89.4 | 91.5 | 88.4 | 86.3 | 92.4 | 91.1 | 93.4 | 84.5 | 84.9 | 92.1 | 90.1 | 90.1 | 89.3 |
| E-6 | 93.4 | 93.8 | 91.7 | 92.6 | 88.7 | 91.3 | 93.8 | 90.3 | 93.9 | 95.7 | 92.2 | 91.7 | 93.4 | 93.2 | 91.8 |
| E-5 | 92.3 | 91.2 | 90.2 | 93.4 | 95 | 93.2 | 94.5 | 96.2 | 92.2 | 89.6 | 91.7 | 90.9 | 92.5 | 91.9 | 90.7 |
| E-4 | 83.4 | 84.4 | 82.3 | 87.3 | 86.1 | 88.4 | 88.5 | 85.7 | 84.5 | 86.1 | 88.7 | 84.8 | 84.2 | 84.9 | 83 |
| E-3 | 85.4 | 87.9 | 87.5 | 87.9 | 91.4 | 84.6 | 88.5 | 86.8 | 88.6 | 80.6 | 90.6 | 84.2 | 85.5 | 88.2 | 87.3 |
| E-2 | 88.5 | 88.4 | 89.1 | 85.1 | 88 | 80.3 | 85.6 | 90.1 | 85.9 | 86.7 | 85.4 | 86.4 | 87.8 | 88.4 | 88.1 |
| E-1 | 86.4 | 82.6 | 84.7 | 73.3 | 89.7 | 77.5 | 75.7 | 92.4 | 90.6 | 66.7 | 85.2 | 75.8 | 83.6 | 84 | 84.1 |
| TOTAL ENLISTED | 88.8 | 89 | 87.9 | 90.3 | 89.8 | 88.8 | 90 | 89.6 | 88.8 | 86 | 89.1 | 87 | 88.9 | 89.1 | 88 |
| TOTAL | 89.2 | 89.6 | 88.5 | 90.4 | 90.3 | 89.2 | 90.3 | 90.1 | 89.1 | 86.8 | 89.4 | 88 | 89.2 | 89.7 | 88.6 |

| CONTINUATION RATES FY 1997 – FY 1999 ACTIVE DUTY PERCENTAGE CHANGES | | | | | | | | | | | | | | Table F-19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **DOD TOTAL** | | | | | | | | | | | | | | |
| | WHITE | | | BLACK | | | HISPANIC | | | OTHER | | | TOTAL | | |
| GRADE | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 | 97 | 98 | 99 |
| O-10 | 65.7 | 71.9 | 63.3 | 100 | 100 | 66.7 | 0 | 0 | 0 | 0 | 0 | 100 | 66.7 | 74.3 | 64.7 |
| O-9 | 74.7 | 77.2 | 80.4 | 50 | 100 | 100 | 0 | 0 | 0 | 50 | 100 | 0 | 72.5 | 77.8 | 80.9 |
| O-8 | 80.3 | 82.9 | 81.9 | 66.7 | 81.8 | 84.6 | 75 | 66.7 | 33.3 | 100 | 100 | 50 | 79.7 | 83 | 81.1 |
| O-7 | 90.1 | 90.5 | 89 | 90.9 | 89.7 | 96 | 100 | 66.7 | 83.3 | 100 | 66.7 | 100 | 90.3 | 90 | 89.4 |
| O-6 | 83.5 | 82.3 | 84.4 | 87.5 | 88.4 | 88.4 | 84.7 | 85.4 | 89.8 | 89.1 | 83.7 | 85.1 | 83.7 | 82.6 | 84.7 |
| O-5 | 89 | 88 | 88.4 | 92.1 | 89.7 | 89.2 | 92.3 | 90.9 | 89.3 | 89.4 | 88.6 | 88.8 | 89.3 | 88.2 | 88.5 |
| O-4 | 90.5 | 92.6 | 91.6 | 89.1 | 92.8 | 93.1 | 90.3 | 91.8 | 92.9 | 88.8 | 92.6 | 93.1 | 90.3 | 92.6 | 91.8 |
| O-3 | 89.9 | 89.2 | 88.1 | 91 | 91.7 | 90 | 90.5 | 89.1 | 88.2 | 90.5 | 89.2 | 88.5 | 90 | 89.4 | 88.2 |
| O-2 | 91.3 | 91.6 | 91.4 | 89.3 | 90.7 | 92.2 | 92.3 | 93.3 | 91.6 | 92 | 91.1 | 91.5 | 91.2 | 91.6 | 91.5 |
| O-1 | 98.5 | 98.4 | 98.6 | 97.8 | 97.7 | 98 | 98.6 | 98.4 | 98.3 | 98.5 | 99.2 | 99 | 98.4 | 98.4 | 98.6 |
| TOTAL OFFICER | 90.6 | 90.6 | 90.2 | 91.3 | 92.3 | 91.8 | 92.1 | 91.8 | 91.4 | 91.7 | 91.6 | 91.5 | 90.7 | 90.8 | 90.4 |
| W-5 | 81.6 | 78.9 | 77.8 | 90.9 | 78.1 | 88.2 | 85.7 | 40 | 71.4 | 83.3 | 40 | 75 | 82.4 | 77.5 | 78.5 |
| W-4 | 78.2 | 79.8 | 82.3 | 82.5 | 84.8 | 84 | 85.7 | 80.3 | 85.9 | 81.6 | 88.6 | 86.5 | 78.9 | 80.6 | 82.8 |
| W-3 | 86.2 | 88.9 | 87.4 | 88.9 | 86.7 | 87.5 | 87.4 | 85.9 | 85.3 | 91 | 84.8 | 84.2 | 86.7 | 88.3 | 87.2 |
| W-2 | 93.4 | 93.7 | 93 | 92.5 | 94.1 | 95 | 92.3 | 90.5 | 93.6 | 93.3 | 96.2 | 92.7 | 93.2 | 93.7 | 93.3 |
| W-1 | 99.1 | 98.5 | 98.3 | 99.1 | 98.6 | 98.4 | 100 | 99 | 99.2 | 99.2 | 100 | 97.1 | 99.2 | 98.7 | 98.3 |
| TOTAL WARRANT | 89.4 | 90.4 | 89.9 | 92.1 | 92.1 | 92.9 | 91.4 | 88.8 | 91.5 | 92.2 | 92.2 | 90.2 | 89.9 | 90.6 | 90.4 |
| TOTAL WARRANT & OFFICER | 90.5 | 90.6 | 90.1 | 91.4 | 92.3 | 92 | 92 | 91.5 | 91.4 | 91.8 | 91.6 | 91.4 | 90.7 | 90.8 | 90.4 |
| E-9 | 80.1 | 78.9 | 78.6 | 82.9 | 82.8 | 84.1 | 83.5 | 78.6 | 83.2 | 82 | 80.2 | 84.1 | 80.9 | 79.7 | 80.3 |
| E-8 | 81 | 79.5 | 80.7 | 82.8 | 80.8 | 83.3 | 81.8 | 80.9 | 83.1 | 81.4 | 80.7 | 80.8 | 81.5 | 80 | 81.5 |
| E-7 | 87.5 | 86.4 | 86.3 | 87.8 | 85.8 | 86.3 | 88.2 | 86.2 | 86.1 | 86.1 | 85 | 85.5 | 87.5 | 86.2 | 86.3 |
| E-6 | 91.2 | 90.2 | 90.3 | 92.6 | 90.7 | 91.4 | 91.9 | 90.6 | 90.9 | 91.7 | 91.1 | 91.6 | 91.6 | 90.4 | 90.7 |
| E-5 | 88.1 | 87.7 | 87 | 91.2 | 91 | 90.9 | 89.6 | 88.6 | 87.9 | 91.1 | 90.6 | 90.3 | 89.1 | 88.7 | 88.1 |
| E-4 | 73.4 | 74.9 | 74.8 | 80.3 | 81.7 | 81.3 | 75.2 | 76.9 | 75.7 | 78.6 | 80.3 | 79.4 | 75.1 | 76.7 | 76.4 |
| E-3 | 81.7 | 84.2 | 85.6 | 82.3 | 84.4 | 85.1 | 83.7 | 86.1 | 87.3 | 85.2 | 87.5 | 88.5 | 82.2 | 84.6 | 85.9 |
| E-2 | 85.9 | 85.6 | 86.1 | 84.4 | 84.3 | 84.8 | 88.9 | 89.1 | 88.8 | 88.3 | 88.4 | 88.6 | 86 | 85.8 | 86.3 |
| E-1 | 81.2 | 80.3 | 80.5 | 80.4 | 80.7 | 80.6 | 86.5 | 84.2 | 85.1 | 83.2 | 83.7 | 83.1 | 81.7 | 81 | 81.2 |
| TOTAL ENLISTED | 83.1 | 83.6 | 83.7 | 86.2 | 86.2 | 86.4 | 84.8 | 85 | 84.8 | 86.1 | 86.5 | 86.5 | 84.1 | 84.4 | 84.5 |
| TOTAL | 84.6 | 85 | 85 | 86.6 | 86.6 | 86.7 | 85.4 | 85.5 | 85.3 | 86.8 | 87.2 | 87.1 | 85.1 | 85.4 | 85.5 |

## TRENDS IN ENLISTMENT PROPENSITY
## WILL DEFINITELY OR PROBABLY BE SERVING ON ACTIVE DUTY[1]

Table F-20

| | MALES | | | | FEMALES | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | White | Black | Hispanic | Total[2] | White | Black | Hispanic | Total[2] |
| **Army** | | | | | | | | |
| 1997 | 9 | 16 | 18 | 11 | 3 | 11 | 9 | 5 |
| 1998 | 9 | 14 | 21 | 12 | 3 | 10 | 13 | 6 |
| 1999 | 9 | 16 | 20 | 12 | 4 | 11 | 12 | 6 |
| **Navy** | | | | | | | | |
| 1997 | 7 | 15 | 14 | 10 | 2 | 7 | 7 | 4 |
| 1998 | 6 | 10 | 20 | 9 | 2 | 13 | 8 | 5 |
| 1999 | 7 | 17 | 21 | 11 | 3 | 15 | 9 | 7 |
| **Marine Corps** | | | | | | | | |
| 1997 | 7 | 15 | 20 | 11 | 2 | 4 | 8 | 3 |
| 1998 | 7 | 12 | 22 | 11 | 2 | 6 | 9 | 4 |
| 1999 | 8 | 14 | 23 | 12 | 2 | 6 | 9 | 4 |
| **Air Force** | | | | | | | | |
| 1997 | 9 | 17 | 18 | 12 | 3 | 11 | 10 | 6 |
| 1998 | 8 | 15 | 24 | 12 | 4 | 12 | 14 | 7 |
| 1999 | 9 | 17 | 24 | 13 | 4 | 17 | 11 | 7 |
| **Active Composite[3]** | | | | | | | | |
| 1997 | 21 | 34 | 37 | 26 | 7 | 19 | 21 | 12 |
| 1998 | 20 | 30 | 44 | 26 | 7 | 23 | 26 | 13 |
| 1999 | 22 | 36 | 46 | 29 | 9 | 29 | 22 | 15 |

Source: Youth Attitude Tracking Study, administered fall of 1997, 1998, and 1999.

[1] Percent of 16-21 year-olds with no more than 2 years of postsecondary education, by gender and race/ethnicity.

[2] Asians and Pacific Islanders and Alaskan Natives/Native Americans are included in the total, but not counted as White, Black, or Hispanic.

[3] Active Composite propensity is the percent saying they will definitely or probably be in one or more of the Services.

## THEMES IN ENLISTMENT PROPENSITY — COMMON REASONS FOR JOINING THE MILITARY[1] — Table F-21

| | MALES | | | | FEMALES | | | |
|---|---|---|---|---|---|---|---|---|
| | White | Black | Hispanic | Total[2] | White | Black | Hispanic | Total[2] |
| **Educational Funding** | | | | | | | | |
| 1997-1999 | 33 | 30 | 32 | 33 | 37 | 36 | 33 | 37 |
| **Job Training/Experience** | | | | | | | | |
| 1997-1999 | 24 | 20 | 28 | 24 | 15 | 22 | 19 | 17 |
| **Duty to Country** | | | | | | | | |
| 1997-1999 | 13 | 9 | 12 | 12 | 11 | 3 | 10 | 9 |
| **Pay** | | | | | | | | |
| 1997-1999 | 12 | 15 | 13 | 13 | 11 | 12 | 10 | 11 |
| **Travel** | | | | | | | | |
| 1997-1999 | 9 | 11 | 8 | 9 | 7 | 12 | 7 | 8 |
| **Develop Self-Discipline** | | | | | | | | |
| 1997-1999 | 6 | 5 | 6 | 6 | 4 | 6 | 3 | 4 |

Source: Youth Attitude Tracking Study, administered fall of 1997, 1998, and 1999.

[1] Percent of 16-21 year-olds with no more than 2 years of postsecondary education, by gender and race/ethnicity.

[2] Asians and Pacific Islanders and Alaskan Natives/Native Americans are included in the total, but not counted as White, Black, or Hispanic.

## THEMES IN ENLISTMENT PROPENSITY — COMMON REASONS FOR NOT JOINING THE MILITARY[1] — Table F-22

| | MALES | | | | FEMALES | | | |
|---|---|---|---|---|---|---|---|---|
| | White | Black | Hispanic | Total[2] | White | Black | Hispanic | Total[2] |
| **Don't Like Military Lifestyle** | | | | | | | | |
| 1997-1999 | 20 | 19 | 14 | 19 | 25 | 25 | 22 | 24 |
| **Have Other Career Interests** | | | | | | | | |
| 1997-1999 | 13 | 6 | 7 | 11 | 12 | 4 | 6 | 9 |
| **Too Long a Commitment** | | | | | | | | |
| 1997-1999 | 11 | 6 | 10 | 10 | 9 | 7 | 8 | 8 |
| **Danger, Threat to Life** | | | | | | | | |
| 1997-1999 | 9 | 16 | 10 | 11 | 8 | 12 | 11 | 9 |
| **Family Obligations** | | | | | | | | |
| 1997-1999 | 8 | 5 | 13 | 8 | 16 | 11 | 20 | 16 |
| **Against Beliefs** | | | | | | | | |
| 1997-1999 | 6 | 8 | 6 | 6 | 5 | 6 | 6 | 6 |

Source: Youth Attitude Tracking Study, administered fall of 1997, 1998, and 1999.

[1] Percent of 16-21 year-olds with no more than 2 years of postsecondary education, by gender and race/ethnicity.

[2] Asians and Pacific Islanders and Alaskan Natives/Native Americans are included in the total, but not counted as White, Black, or Hispanic.

**ARMY NONDEPLOYABLE UNIT PERSONNEL (NUMBER BY CATEGORY, GRADE, AND GENDER)** — Table F-23

| GRADE | HIV+ M | HIV+ F | MEDICAL PERMANENT M | MEDICAL PERMANENT F | HAZARDOUS DUTY RESTRICTION M | HAZARDOUS DUTY RESTRICTION F | COUNTRY RESTRICTION M | COUNTRY RESTRICTION F | TOTAL PERMANENT M | TOTAL PERMANENT F | AWOL M | AWOL F | LEGAL PROCESSING M | LEGAL PROCESSING F | PREGNANCY M | PREGNANCY F | MEDICAL TEMPORARY M | MEDICAL TEMPORARY F | ADMINISTRATIVE M | ADMINISTRATIVE F | TOTAL TEMPORARY M | TOTAL TEMPORARY F | ARMY NONDEPLOYABLE UNIT PERSONNEL M | ARMY NONDEPLOYABLE UNIT PERSONNEL F | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| O-6 | 4 | 0 | 23 | 3 | 0 | 0 | - | - | 27 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 17 | 19 | 6 | 74 | 23 | 101 | 26 | 127 |
| O-5 | 11 | 1 | 42 | 12 | 0 | 0 | - | - | 53 | 13 | 0 | 0 | 3 | 0 | 0 | 8 | 114 | 28 | 127 | 26 | 244 | 62 | 297 | 75 | 372 |
| O-4 | 5 | 0 | 40 | 28 | 0 | 2 | - | - | 45 | 30 | 0 | 0 | 6 | 1 | 0 | 55 | 149 | 70 | 248 | 43 | 403 | 169 | 448 | 199 | 647 |
| O-3 | 0 | 0 | 34 | 21 | 2 | 0 | - | - | 36 | 21 | 0 | 0 | 20 | 4 | 0 | 116 | 166 | 90 | 208 | 49 | 394 | 259 | 430 | 280 | 710 |
| O-2 | 0 | 0 | 22 | 11 | 1 | 0 | - | - | 23 | 11 | 0 | 0 | 10 | 13 | 0 | 87 | 48 | 51 | 30 | 19 | 88 | 170 | 111 | 181 | 292 |
| O-1 | 0 | 0 | 1 | 1 | 0 | 0 | - | - | 1 | 1 | 0 | 0 | 4 | 1 | 0 | 36 | 23 | 16 | 1020 | 188 | 1047 | 241 | 1048 | 242 | 1290 |
| TOT OFR | 20 | 1 | 162 | 76 | 3 | 2 | - | - | 185 | 79 | 0 | 0 | 43 | 19 | 0 | 302 | 555 | 272 | 1652 | 331 | 2250 | 924 | 2435 | 1003 | 3438 |
| W-5 | 0 | 0 | 11 | 0 | 0 | 0 | - | - | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 13 | 0 | 13 |
| W-4 | 1 | 0 | 18 | 3 | 0 | 0 | - | - | 19 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 1 | 3 | 0 | 15 | 1 | 34 | 4 | 38 |
| W-3 | 2 | 0 | 22 | 1 | 0 | 0 | - | - | 24 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 14 | 7 | 6 | 1 | 21 | 8 | 45 | 9 | 54 |
| W-2 | 0 | 0 | 10 | 3 | 0 | 0 | - | - | 10 | 3 | 0 | 0 | 9 | 2 | 0 | 8 | 18 | 16 | 4 | 3 | 31 | 29 | 41 | 32 | 73 |
| W-1 | 1 | 0 | 2 | 1 | 0 | 0 | - | - | 3 | 1 | 0 | 0 | 4 | 0 | 0 | 2 | 9 | 5 | 4 | 2 | 17 | 9 | 20 | 10 | 30 |
| TOT WO | 4 | 0 | 63 | 8 | 0 | 0 | - | - | 67 | 8 | 0 | 0 | 15 | 2 | 0 | 10 | 54 | 29 | 17 | 6 | 86 | 47 | 153 | 55 | 208 |
| E-9 | 3 | 0 | 38 | 3 | 0 | 0 | - | - | 41 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 32 | 3 | 36 | 3 | 70 | 6 | 111 | 9 | 120 |
| E-8 | 6 | 2 | 87 | 25 | 0 | 0 | - | - | 93 | 27 | 0 | 0 | 3 | 0 | 0 | 4 | 92 | 29 | 387 | 41 | 482 | 74 | 575 | 101 | 676 |
| E-7 | 41 | 2 | 329 | 104 | 2 | 0 | - | - | 372 | 106 | 0 | 0 | 73 | 0 | 0 | 35 | 324 | 123 | 1599 | 155 | 1996 | 313 | 2368 | 419 | 2787 |
| E-6 | 68 | 5 | 332 | 100 | 1 | 1 | - | - | 401 | 106 | 7 | 2 | 93 | 16 | 0 | 183 | 392 | 127 | 1953 | 253 | 2445 | 581 | 2846 | 687 | 3533 |
| E-5 | 66 | 8 | 346 | 128 | 9 | 4 | - | - | 421 | 140 | 11 | 3 | 203 | 39 | 0 | 498 | 441 | 137 | 650 | 200 | 1305 | 877 | 1726 | 1017 | 2743 |
| E-4 | 37 | 8 | 494 | 330 | 5 | 0 | - | - | 536 | 338 | 87 | 9 | 552 | 131 | 0 | 1505 | 920 | 328 | 226 | 170 | 1785 | 2143 | 2321 | 2481 | 4802 |
| E-3 | 8 | 3 | 203 | 82 | 1 | 0 | - | - | 212 | 85 | 69 | 14 | 586 | 3 | 0 | 923 | 598 | 267 | 134 | 162 | 1387 | 1369 | 1599 | 1454 | 3053 |
| E-2 | 1 | 1 | 76 | 28 | 0 | 0 | - | - | 77 | 29 | 63 | 16 | 617 | 69 | 0 | 267 | 216 | 107 | 49 | 27 | 945 | 486 | 1022 | 515 | 1537 |
| E-1 | 1 | 1 | 37 | 5 | 0 | 0 | - | - | 38 | 6 | 93 | 14 | 1497 | 166 | 0 | 56 | 63 | 23 | 65 | 18 | 1718 | 277 | 1756 | 283 | 2039 |
| TOT EN | 231 | 30 | 1942 | 805 | 18 | 5 | - | - | 2191 | 840 | 330 | 58 | 3626 | 424 | 0 | 3471 | 3078 | 1144 | 5099 | 1029 | 12133 | 6126 | 14324 | 6966 | 21290 |
| COL TOT | 255 | 31 | 2167 | 889 | 21 | 7 | - | - | 2443 | 927 | 330 | 58 | 3684 | 445 | 0 | 3783 | 3687 | 1445 | 6768 | 1366 | 14469 | 7097 | 16912 | 8024 | 24936 |

NOTES:
1. Army data is as of September 15, 1999. Army data sources are Army Major Command reports and HQDA HIV+ Data Base.
2. Army strength data as of September 15, 1999.
3. Army does not report Country Restrictions.
4. M = Male; F = Female; TOT OFR = Total Officer; TOT WO = Total Warrant Officer; TOT EN = Total Enlisted; COL TOT = Column Total.

## ARMY NONDEPLOYABLE UNIT PERSONNEL (NUMBER BY CATEGORY, GRADE, AND GENDER) (BY PERCENT)

Table F-24

| GRADE | HIV+ M | HIV+ F | MEDICAL PERMANENT M | MEDICAL PERMANENT F | HAZARDOUS DUTY RESTRICTION M | HAZARDOUS DUTY RESTRICTION F | COUNTRY RESTRICTION M | COUNTRY RESTRICTION F | TOTAL PERMANENT M | TOTAL PERMANENT F | AWOL M | AWOL F | LEGAL PROCESSING M | LEGAL PROCESSING F | PREGNANCY M | PREGNANCY F | MEDICAL TEMPORARY M | MEDICAL TEMPORARY F | ADMINISTRATIVE M | ADMINISTRATIVE F | TOTAL TEMPORARY M | TOTAL TEMPORARY F | ARMY NONDEPLOYABLE UNIT PERSONNEL M | ARMY NONDEPLOYABLE UNIT PERSONNEL F | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| O-6 | 0.1 | 0.0 | 0.7 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 6.2 | 0.6 | 2.2 | 2.2 | 8.4 | 3.1 | 9.5 | 3.6 |
| O-5 | 0.1 | 0.1 | 0.5 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 1.4 | 2.6 | 1.6 | 2.5 | 3.0 | 5.8 | 3.7 | 7.1 | 4.1 |
| O-4 | 0.0 | 0.0 | 0.3 | 1.5 | 0.0 | 0.1 | 0.0 | 0.0 | 0.4 | 1.6 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 2.9 | 1.2 | 3.7 | 2.0 | 2.3 | 3.2 | 9.0 | 3.6 | 10.6 | 4.5 |
| O-3 | 0.0 | 0.0 | 0.2 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.7 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 3.8 | 1.0 | 2.9 | 1.2 | 1.6 | 2.3 | 8.4 | 2.6 | 9.1 | 3.6 |
| O-2 | 0.0 | 0.0 | 0.2 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.6 | 0.0 | 0.0 | 0.1 | 0.7 | 0.0 | 4.4 | 0.5 | 2.6 | 0.3 | 1.0 | 0.9 | 8.5 | 1.2 | 9.1 | 2.6 |
| O-1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 2.5 | 0.3 | 1.1 | 15.4 | 13.0 | 15.8 | 16.6 | 15.8 | 16.7 | 16.0 |
| TOT OFR | 0.0 | 0.0 | 0.3 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.8 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 | 3.1 | 1.0 | 2.8 | 2.9 | 3.4 | 4.0 | 9.5 | 4.3 | 10.3 | 5.2 |
| W-5 | 0.0 | 0.0 | 3.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.1 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 2.9 | 0.0 | 0.0 | 0.6 | 2.9 | 3.6 | 0.0 | 3.6 |
| W-4 | 0.1 | 0.0 | 1.3 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 2.9 | 0.2 | 0.0 | 1.1 | 2.9 | 2.4 | 11.8 | 2.6 |
| W-3 | 0.1 | 0.0 | 0.8 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 5.7 | 0.2 | 0.8 | 0.7 | 6.5 | 1.6 | 7.3 | 1.8 |
| W-2 | 0.0 | 0.0 | 0.2 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.7 | 0.0 | 0.0 | 0.2 | 0.5 | 0.0 | 1.8 | 0.4 | 3.6 | 0.1 | 0.7 | 0.7 | 6.6 | 0.9 | 7.2 | 1.5 |
| W-1 | 0.1 | 0.0 | 0.1 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.6 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 1.1 | 0.5 | 2.8 | 0.2 | 1.1 | 1.0 | 5.1 | 1.1 | 5.6 | 1.6 |
| TOT WO | 0.0 | 0.0 | 0.6 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 1.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.0 | 1.3 | 0.5 | 3.7 | 0.2 | 0.8 | 0.8 | 6.0 | 1.4 | 7.1 | 1.8 |
| E-9 | 0.1 | 0.0 | 1.3 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 1.6 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 1.1 | 1.6 | 1.2 | 1.6 | 2.3 | 3.2 | 3.7 | 4.8 | 3.7 |
| E-8 | 0.1 | 0.2 | 0.9 | 2.3 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 2.5 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.4 | 1.0 | 2.7 | 4.1 | 3.8 | 5.1 | 6.9 | 6.0 | 9.5 | 6.4 |
| E-7 | 0.1 | 0.0 | 1.0 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 2.4 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.8 | 1.0 | 2.8 | 4.8 | 3.5 | 5.9 | 7.1 | 7.0 | 9.5 | 7.3 |
| E-6 | 0.1 | 0.1 | 0.7 | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 1.5 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 2.7 | 0.8 | 1.9 | 4.0 | 3.7 | 5.0 | 8.5 | 5.8 | 10.0 | 6.3 |
| E-5 | 0.1 | 0.1 | 0.6 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 1.4 | 0.0 | 0.0 | 0.3 | 0.4 | 0.0 | 4.9 | 0.8 | 1.3 | 1.1 | 1.9 | 2.2 | 8.5 | 2.9 | 9.9 | 4.0 |
| E-4 | 0.0 | 0.0 | 0.6 | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 1.8 | 0.1 | 0.0 | 0.6 | 0.7 | 0.0 | 8.0 | 1.1 | 1.8 | 0.3 | 0.9 | 2.0 | 11.5 | 2.7 | 13.3 | 4.5 |
| E-3 | 0.0 | 0.0 | 0.5 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 1.0 | 0.2 | 0.2 | 1.4 | 0.0 | 0.0 | 10.6 | 1.4 | 3.1 | 0.3 | 1.9 | 3.2 | 15.8 | 3.7 | 16.8 | 5.9 |
| E-2 | 0.0 | 0.0 | 0.3 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.5 | 0.2 | 0.3 | 2.2 | 1.3 | 0.0 | 5.0 | 0.8 | 2.0 | 0.2 | 0.5 | 3.3 | 9.1 | 3.6 | 9.6 | 4.5 |
| E-1 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.6 | 0.5 | 8.9 | 5.6 | 0.0 | 1.9 | 0.4 | 0.8 | 0.4 | 0.6 | 10.2 | 9.4 | 10.5 | 9.6 | 10.3 |
| TOT EN | 0.1 | 0.1 | 0.6 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 1.4 | 0.1 | 0.1 | 1.1 | 0.7 | 0.0 | 5.9 | 0.9 | 2.0 | 1.5 | 1.8 | 3.7 | 10.5 | 4.3 | 11.9 | 5.5 |
| COL TOT | 0.1 | 0.0 | 0.5 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 1.3 | 0.1 | 0.1 | 0.9 | 0.6 | 0.0 | 5.5 | 0.9 | 2.1 | 1.7 | 2.0 | 3.6 | 10.3 | 4.3 | 11.6 | 5.3 |

NOTES:
1. Army data is as of September 15, 1999. Army data sources are Army Major Command reports and HQDA HIV+ Data Base.
2. Army strength data as of September 15, 1999.
3. Army does not report Country Restrictions.
4. M = Male; F = Female; TOT OFR = Total Officer; TOT WO = Total Warrant Officer; TOT EN = Total Enlisted; COL TOT = Column Total.

**Table F-25**

## NAVY NONDEPLOYABLE UNIT PERSONNEL (NUMBER BY CATEGORY, GRADE, AND GENDER)

| | PERMANENT | | | | | | | | | | TEMPORARY | | | | | | | | | | | | TOTAL | | |
| | HIV+ | | MEDICAL PERMANENT | | HAZARDOUS DUTY RESTRICTION | | COUNTRY RESTRICTION | | TOTAL PERMANENT | | AWOL | | LEGAL PROCESSING | | PREGNANCY | | MEDICAL TEMPORARY | | ADMINISTRATIVE | | TOTAL TEMPORARY | | NAVY NONDEPLOYABLE UNIT PERSONNEL | | TOTAL |
| GRADE | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| O-6 | 2 | 0 | 2 | 0 | - | - | - | - | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 1 | 13 | 1 | 18 | 2 | 22 | 2 | 24 |
| O-5 | 2 | 0 | 2 | 0 | - | - | - | - | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 2 | 50 | 3 | 66 | 5 | 70 | 5 | 75 |
| O-4 | 9 | 0 | 3 | 5 | - | - | - | - | 12 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 21 | 13 | 54 | 6 | 80 | 19 | 92 | 24 | 116 |
| O-3 | 5 | 0 | 13 | 6 | - | - | - | - | 18 | 6 | 0 | 0 | 8 | 0 | 0 | 0 | 51 | 16 | 85 | 14 | 144 | 30 | 162 | 36 | 198 |
| O-2 | 0 | 0 | 3 | 1 | - | - | - | - | 3 | 1 | 1 | 0 | 6 | 0 | 0 | 0 | 30 | 11 | 37 | 3 | 74 | 14 | 77 | 15 | 92 |
| O-1 | 1 | 0 | 6 | 4 | - | - | - | - | 7 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | 7 | 16 | 39 | 29 | 46 | 36 | 50 | 86 |
| TOT OFR | 19 | 0 | 29 | 16 | - | - | - | - | 48 | 16 | 2 | 0 | 20 | 0 | 0 | 0 | 134 | 50 | 255 | 66 | 411 | 116 | 459 | 132 | 591 |
| C-5 | 0 | 0 | 0 | 0 | - | - | - | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C-4 | 0 | 0 | 0 | 0 | - | - | - | - | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 6 |
| C-3 | 0 | 0 | 1 | 0 | - | - | - | - | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 5 | 0 | 6 | 0 | 6 |
| C-2 | 0 | 0 | 0 | 1 | - | - | - | - | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 8 | 1 | 8 | 2 | 10 |
| C-1 | 0 | 0 | 0 | 0 | - | - | - | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOT WO | 0 | 0 | 1 | 1 | - | - | - | - | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 11 | 1 | 6 | 0 | 19 | 1 | 20 | 2 | 22 |
| E-9 | 3 | 0 | 2 | 0 | - | - | - | - | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 1 | 12 | 0 | 42 | 1 | 47 | 1 | 48 |
| E-8 | 3 | 0 | 3 | 1 | - | - | - | - | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | 8 | 42 | 0 | 94 | 8 | 100 | 9 | 109 |
| E-7 | 13 | 0 | 25 | 3 | - | - | - | - | 38 | 3 | 0 | 0 | 3 | 1 | 0 | 2 | 247 | 40 | 120 | 10 | 370 | 53 | 408 | 56 | 464 |
| E-6 | 89 | 5 | 44 | 12 | - | - | - | - | 133 | 17 | 28 | 1 | 19 | 0 | 0 | 24 | 713 | 104 | 275 | 29 | 1035 | 158 | 1168 | 175 | 1343 |
| E-5 | 122 | 10 | 23 | 3 | - | - | - | - | 145 | 13 | 73 | 2 | 21 | 2 | 0 | 102 | 877 | 180 | 323 | 37 | 1294 | 323 | 1439 | 336 | 1775 |
| E-4 | 46 | 2 | 3 | 1 | - | - | - | - | 49 | 3 | 182 | 3 | 39 | 0 | 0 | 432 | 757 | 274 | 476 | 90 | 1454 | 799 | 1503 | 802 | 2305 |
| E-3 | 9 | 0 | 0 | 0 | - | - | - | - | 9 | 0 | 393 | 19 | 66 | 2 | 0 | 511 | 486 | 192 | 302 | 58 | 1247 | 782 | 1256 | 782 | 2038 |
| E-2 | 5 | 0 | 0 | 0 | - | - | - | - | 5 | 0 | 484 | 28 | 123 | 4 | 0 | 190 | 178 | 71 | 273 | 38 | 1058 | 331 | 1063 | 331 | 1394 |
| E-1 | 0 | 0 | 0 | 0 | - | - | - | - | 0 | 0 | 476 | 35 | 338 | 29 | 0 | 14 | 26 | 20 | 271 | 50 | 1111 | 148 | 1111 | 148 | 1259 |
| TOT EN | 290 | 17 | 100 | 20 | - | - | - | - | 390 | 37 | 1636 | 88 | 609 | 38 | 0 | 1275 | 3366 | 890 | 2094 | 312 | 7705 | 2603 | 8095 | 2640 | 10735 |
| COL TOT | 309 | 17 | 130 | 37 | - | - | - | - | 439 | 54 | 1639 | 88 | 630 | 38 | 0 | 1275 | 3511 | 941 | 2355 | 378 | 8135 | 2720 | 8574 | 2774 | 11348 |

NOTES:
1. Navy data is as of September 30, 1999. Navy source files are the Enlisted and Officer Master Files, the Diary Message Reporting System, and HIV+ Data Base.
2. Navy strength data is Defense Manpower Data Center, September 30, 1999, Active Duty Master File.
3. Navy does not report Hazardous Duty Restriction or Country Restriction categories.
4. Navy manages Legal Nondeployables in the individual's account.
5. M = Male; F = Female; TOT OFR = Total Officer; TOT WO = Total Warrant Officer; TOT EN = Total Enlisted; COL TOT = Column Total.

## NAVY NONDEPLOYABLE UNIT PERSONNEL (NUMBER BY CATEGORY, GRADE, AND GENDER) (BY PERCENT)

Table F-26

| GRADE | HIV+ M | HIV+ F | MEDICAL PERMANENT M | MEDICAL PERMANENT F | HAZARDOUS DUTY RESTRICTION M | HAZARDOUS DUTY RESTRICTION F | COUNTRY RESTRICTION M | COUNTRY RESTRICTION F | TOTAL PERMANENT M | TOTAL PERMANENT F | AWOL M | AWOL F | LEGAL PROCESSING M | LEGAL PROCESSING F | PREGNANCY M | PREGNANCY F | MEDICAL TEMPORARY M | MEDICAL TEMPORARY F | ADMINISTRATIVE M | ADMINISTRATIVE F | TOTAL TEMPORARY M | TOTAL TEMPORARY F | NAVY NONDEPLOYABLE UNIT PERSONNEL M | NAVY NONDEPLOYABLE UNIT PERSONNEL F | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| O-6 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.5 | 0.3 | 0.6 | 0.6 | 0.8 | 0.6 | 0.8 |
| O-5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.2 | 0.9 | 0.4 | 1.1 | 0.6 | 1.2 | 0.6 | 1.1 |
| O-4 | 0.1 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.4 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.3 | 1.0 | 0.7 | 0.4 | 1.0 | 1.4 | 1.2 | 1.8 | 1.3 |
| O-3 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.4 | 0.6 | 0.6 | 0.6 | 1.1 | 1.2 | 1.2 | 1.4 | 1.3 |
| O-2 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.7 | 1.3 | 0.9 | 0.4 | 1.8 | 1.7 | 1.9 | 1.8 | 1.9 |
| O-1 | 0.0 | 0.0 | 0.3 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 1.3 | 0.8 | 7.3 | 1.4 | 8.6 | 1.8 | 9.3 | 3.4 |
| TOT OFR | 0.1 | 0.0 | 0.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.4 | 0.8 | 0.7 | 1.0 | 1.2 | 1.8 | 1.3 | 2.1 | 1.4 |
| C-5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C-4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 | 1.5 | 0.0 | 1.5 | 0.0 | 1.5 |
| C-3 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.5 | 0.0 | 1.2 | 0.0 | 1.4 | 0.0 | 1.3 |
| C-2 | 0.0 | 0.0 | 0.0 | 2.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.4 | 2.2 | 0.6 | 0.0 | 1.2 | 2.2 | 1.2 | 4.3 | 1.4 |
| C-1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOT WO | 0.0 | 0.0 | 0.1 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 1.3 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.7 | 1.3 | 0.4 | 0.0 | 1.3 | 1.3 | 1.3 | 2.6 | 1.4 |
| E-9 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 1.1 | 0.5 | 0.0 | 1.8 | 1.1 | 2.0 | 1.1 | 1.9 |
| E-8 | 0.1 | 0.0 | 0.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 2.6 | 0.9 | 0.0 | 2.0 | 2.6 | 2.1 | 2.9 | 2.2 |
| E-7 | 0.1 | 0.0 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 1.4 | 2.7 | 0.7 | 0.7 | 2.1 | 3.6 | 2.3 | 3.8 | 2.5 |
| E-6 | 0.2 | 0.1 | 0.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 1.8 | 2.7 | 0.7 | 0.8 | 2.6 | 4.2 | 2.9 | 4.6 | 3.1 |
| E-5 | 0.2 | 0.2 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 | 1.8 | 3.3 | 0.6 | 0.7 | 2.6 | 5.8 | 2.9 | 6.1 | 3.2 |
| E-4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.4 | 0.0 | 0.1 | 0.0 | 0.0 | 5.1 | 1.7 | 3.2 | 1.0 | 1.1 | 3.2 | 9.5 | 3.3 | 9.5 | 4.3 |
| E-3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 0.3 | 0.2 | 0.0 | 0.0 | 7.0 | 1.7 | 2.6 | 1.0 | 0.8 | 4.2 | 10.7 | 4.3 | 10.7 | 5.6 |
| E-2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 | 0.7 | 0.7 | 0.1 | 0.0 | 4.9 | 1.0 | 1.8 | 1.5 | 1.0 | 5.9 | 8.5 | 5.9 | 8.5 | 6.3 |
| E-1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 2.9 | 1.1 | 2.0 | 0.9 | 0.4 | 0.4 | 0.2 | 0.6 | 1.6 | 1.5 | 6.7 | 4.6 | 6.7 | 4.6 | 6.3 |
| TOT EN | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.7 | 0.3 | 0.3 | 0.1 | 0.0 | 3.7 | 1.5 | 2.6 | 0.9 | 0.9 | 3.4 | 7.6 | 3.6 | 7.8 | 4.2 |
| COL TOT | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.6 | 0.2 | 0.2 | 0.1 | 0.0 | 3.1 | 1.3 | 2.3 | 0.9 | 0.9 | 3.1 | 6.7 | 3.3 | 6.8 | 3.8 |

NOTES:
1. Navy data is as of September 30, 1999. Navy source files are the Enlisted and Officer Master Files, the Diary Message Reporting System, and HIV+ Data Base.
2. Navy strength data is Defense Manpower Data Center, September 30, 1999, Active Duty Master File.
3. Navy does not report Hazardous Duty Restriction or Country Restriction categories.
4. Navy manages Legal Nondeployables in the individual's account.
5. M = Male; F = Female; TOT OFR = Total Officer; TOT WO = Total Warrant Officer; TOT EN = Total Enlisted; COL TOT = Column Total.

## MARINE CORPS NONDEPLOYABLE UNIT PERSONNEL (NUMBER BY CATEGORY, GRADE, AND GENDER)

Table F-27

| GRADE | HIV+ M | HIV+ F | MEDICAL PERMANENT M | MEDICAL PERMANENT F | HAZARDOUS DUTY RESTRICTION M | HAZARDOUS DUTY RESTRICTION F | COUNTRY RESTRICTION M | COUNTRY RESTRICTION F | TOTAL PERMANENT M | TOTAL PERMANENT F | AWOL M | AWOL F | LEGAL PROCESSING M | LEGAL PROCESSING F | PREGNANCY M | PREGNANCY F | MEDICAL TEMPORARY M | MEDICAL TEMPORARY F | ADMINISTRATIVE M | ADMINISTRATIVE F | TOTAL TEMPORARY M | TOTAL TEMPORARY F | MARINE CORPS NONDEPLOYABLE UNIT PERSONNEL M | MARINE CORPS NONDEPLOYABLE UNIT PERSONNEL F | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| O-6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 2 | 1 | 3 | 4 |
| O-5 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 2 | 0 | 0 | 14 | 2 | 18 | 2 | 20 |
| O-4 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 5 | 0 | 0 | 9 | 6 | 15 | 6 | 21 |
| O-3 | 2 | 0 | 2 | 1 | 5 | 0 | 0 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 18 | 4 | 0 | 0 | 18 | 11 | 27 | 12 | 39 |
| O-2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 4 | 1 | 0 | 0 | 5 | 4 | 7 | 4 | 11 |
| O-1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 2 |
| TOT OFR | 3 | 1 | 7 | 1 | 10 | 0 | 1 | 0 | 21 | 2 | 0 | 0 | 1 | 0 | 0 | 12 | 46 | 14 | 1 | 0 | 48 | 26 | 69 | 28 | 97 |
| W-5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 5 | 0 | 5 |
| W-4 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 1 | 0 | 7 | 1 | 11 | 1 | 12 |
| W-3 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 7 | 0 | 11 | 0 | 11 |
| W-2 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 6 | 1 | 0 | 0 | 7 | 2 | 11 | 2 | 13 |
| W-1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 2 |
| TOT WO | 0 | 0 | 3 | 0 | 10 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 25 | 2 | 1 | 0 | 27 | 3 | 40 | 3 | 43 |
| E-9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 26 | 1 | 86 | 1 | 113 | 2 | 113 | 2 | 115 |
| E-8 | 2 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 3 | 222 | 9 | 294 | 14 | 308 | 14 | 322 |
| E-7 | 11 | 0 | 5 | 3 | 23 | 0 | 0 | 0 | 39 | 3 | 0 | 1 | 1 | 0 | 0 | 5 | 196 | 14 | 617 | 45 | 814 | 65 | 853 | 68 | 921 |
| E-6 | 14 | 0 | 1 | 0 | 11 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 4 | 0 | 0 | 24 | 294 | 37 | 803 | 49 | 1101 | 110 | 1127 | 110 | 1237 |
| E-5 | 11 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 14 | 1 | 3 | 0 | 11 | 0 | 0 | 64 | 480 | 62 | 434 | 26 | 928 | 152 | 942 | 153 | 1095 |
| E-4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 1 | 28 | 0 | 0 | 109 | 645 | 127 | 144 | 9 | 818 | 246 | 821 | 246 | 1067 |
| E-3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 71 | 0 | 73 | 3 | 0 | 170 | 760 | 154 | 86 | 6 | 990 | 333 | 993 | 334 | 1327 |
| E-2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 1 | 56 | 1 | 0 | 23 | 122 | 9 | 43 | 2 | 271 | 36 | 271 | 36 | 307 |
| E-1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 1 | 120 | 1 | 0 | 3 | 28 | 2 | 72 | 1 | 251 | 8 | 251 | 8 | 259 |
| TOT EN | 44 | 2 | 6 | 3 | 49 | 0 | 0 | 0 | 99 | 5 | 156 | 4 | 294 | 5 | 0 | 400 | 2623 | 409 | 2507 | 148 | 5580 | 966 | 5679 | 971 | 6650 |
| COL TOT | 47 | 3 | 16 | 4 | 69 | 0 | 1 | 0 | 133 | 7 | 156 | 4 | 296 | 5 | 0 | 413 | 2694 | 425 | 2509 | 148 | 5655 | 995 | 5788 | 1002 | 6790 |

NOTES:
1. Marine Corps data is as of September 30, 1999. Marine Corps source files are the Marine Corps Headquarters Master File and HIV+ Data Base.
2. Marine Corps strength data source as of September 30, 1999.
3. M = Male; F = Female; TOT OFR = Total Officer; TOT WO = Total Warrant Officer; TOT EN = Total Enlisted; COL TOT = Column Total.

## MARINE CORPS NONDEPLOYABLE UNIT PERSONNEL (NUMBER BY CATEGORY, GRADE, AND GENDER) (BY PERCENT)

Table F-28

| GRADE | PERMANENT HIV+ M | HIV+ F | MEDICAL PERMANENT M | MEDICAL PERMANENT F | HAZARDOUS DUTY RESTRICTION M | HAZARDOUS DUTY RESTRICTION F | COUNTRY RESTRICTION M | COUNTRY RESTRICTION F | TOTAL PERMANENT M | TOTAL PERMANENT F | TEMPORARY AWOL M | AWOL F | LEGAL PROCESSING M | LEGAL PROCESSING F | PREGNANCY M | PREGNANCY F | MEDICAL TEMPORARY M | MEDICAL TEMPORARY F | ADMINISTRATIVE M | ADMINISTRATIVE F | TOTAL TEMPORARY M | TOTAL TEMPORARY F | TOTAL MARINE CORPS NONDEPLOYABLE UNIT PERSONNEL M | F | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| O-6 | 0.0 | 8.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 16.7 | 0.0 | 0.0 | 0.2 | 16.7 | 0.2 | 25.0 | 0.7 |
| O-5 | 0.1 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 3.5 | 0.0 | 0.0 | 0.9 | 3.5 | 1.1 | 3.5 | 1.2 |
| O-4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 0.3 | 5.7 | 0.0 | 0.0 | 0.3 | 6.9 | 0.5 | 6.9 | 0.7 |
| O-3 | 0.0 | 0.0 | 0.0 | 0.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.1 | 0.4 | 2.3 | 0.0 | 0.0 | 0.4 | 6.4 | 0.6 | 7.0 | 0.9 |
| O-2 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 0.2 | 0.6 | 0.0 | 0.0 | 0.3 | 2.2 | 0.4 | 2.2 | 0.5 |
| O-1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 1.0 | 0.1 | 1.0 | 0.2 |
| TOT OFR | 0.0 | 0.2 | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.4 | 2.3 | 0.0 | 0.0 | 0.4 | 4.3 | 0.6 | 4.6 | 0.8 |
| W-5 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.9 | 0.0 | 0.0 | 0.0 | 4.9 | 0.0 | 6.1 | 0.0 | 5.8 |
| W-4 | 0.0 | 0.0 | 0.4 | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.6 | 11.1 | 0.4 | 0.0 | 3.0 | 11.1 | 4.7 | 11.1 | 5.0 |
| W-3 | 0.0 | 0.0 | 0.2 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 | 0.0 | 1.6 | 0.0 | 2.5 | 0.0 | 2.3 |
| W-2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 1.8 | 0.8 | 1.8 | 0.0 | 0.0 | 1.0 | 3.6 | 1.5 | 3.6 | 1.7 |
| W-1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.9 | 0.0 | 0.9 |
| TOT WO | 0.0 | 0.0 | 0.2 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.9 | 1.5 | 1.9 | 0.1 | 0.0 | 1.6 | 2.8 | 2.3 | 2.8 | 2.4 |
| E-9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 2.2 | 3.0 | 7.2 | 3.0 | 9.5 | 6.1 | 9.5 | 6.1 | 9.4 |
| E-8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 2.3 | 1.7 | 7.1 | 5.2 | 9.4 | 8.1 | 9.9 | 8.1 | 9.8 |
| E-7 | 0.1 | 0.0 | 0.1 | 0.7 | 0.3 | 0.0 | 0.0 | 0.0 | 0.5 | 0.7 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 1.1 | 2.3 | 3.0 | 7.4 | 9.8 | 9.7 | 14.1 | 10.2 | 14.8 | 10.4 |
| E-6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.4 | 2.3 | 5.3 | 6.3 | 7.0 | 8.6 | 15.8 | 8.8 | 15.8 | 9.2 |
| E-5 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 5.3 | 2.3 | 5.1 | 2.1 | 2.1 | 4.5 | 12.5 | 4.6 | 12.6 | 5.0 |
| E-4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 6.3 | 2.5 | 7.3 | 0.6 | 0.5 | 3.2 | 14.2 | 3.2 | 14.2 | 3.9 |
| E-3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.2 | 0.1 | 0.0 | 6.5 | 2.0 | 5.9 | 0.2 | 0.2 | 2.7 | 12.7 | 2.7 | 12.7 | 3.3 |
| E-2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.2 | 0.5 | 0.2 | 0.0 | 3.8 | 1.1 | 1.5 | 0.4 | 0.3 | 2.4 | 5.9 | 2.4 | 5.9 | 2.6 |
| E-1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 7.3 | 1.9 | 0.0 | 5.8 | 1.7 | 3.8 | 4.4 | 1.9 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 |
| TOT EN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.0 | 5.3 | 2.1 | 5.4 | 2.1 | 1.9 | 4.6 | 12.7 | 4.7 | 12.8 | 5.1 |
| COL TOT | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.2 | 0.1 | 0.0 | 5.0 | 2.0 | 5.1 | 1.8 | 1.8 | 4.2 | 12.0 | 4.3 | 12.0 | 4.7 |

NOTES:
1. Marine Corps data is as of September 30, 1999. Marine Corps source files are the Marine Corps Headquarters Master File and HIV+ Data Base.
2. Marine Corps strength data source as of September 30, 1999.
3. M = Male; F = Female; TOT OFR = Total Officer; TOT WO = Total Warrant Officer; TOT EN = Total Enlisted; COL TOT = Column Total.

F-31

## AIR FORCE NONDEPLOYABLE UNIT PERSONNEL (NUMBER BY CATEGORY, GRADE, AND GENDER)  Table F-29

| GRADE | | PERMANENT | | | | | | | | | | TEMPORARY | | | | | | | | | | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | HIV + | | MEDICAL PERMANENT | | HAZARDOUS DUTY RESTRICTION | | COUNTRY RESTRICTION | | TOTAL PERMANENT | | AWOL | | LEGAL PROCESSING | | PREGNANCY | | MEDICAL TEMPORARY | | ADMINISTRATIVE | | TOTAL TEMPORARY | | AIR FORCE NONDEPLOYABLE UNIT PERSONNEL | | TOTAL |
| | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | |
| O-6 | 1 | 0 | 66 | 8 | 1 | 0 | 2 | 0 | 70 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 10 | 2 | 97 | 8 | 108 | 10 | 178 | 18 | 196 |
| O-5 | 2 | 0 | 115 | 19 | 0 | 0 | 0 | 0 | 117 | 19 | 0 | 0 | 0 | 1 | 0 | 9 | 31 | 10 | 245 | 36 | 276 | 56 | 393 | 75 | 468 |
| O-4 | 3 | 0 | 117 | 23 | 0 | 0 | 1 | 0 | 121 | 23 | 0 | 0 | 0 | 0 | 0 | 77 | 33 | 17 | 437 | 91 | 470 | 185 | 591 | 208 | 799 |
| O-3 | 1 | 1 | 108 | 21 | 0 | 0 | 1 | 0 | 110 | 22 | 0 | 0 | 3 | 1 | 0 | 246 | 47 | 35 | 685 | 164 | 735 | 446 | 845 | 468 | 1313 |
| O-2 | 1 | 0 | 11 | 3 | 0 | 0 | 0 | 0 | 12 | 3 | 0 | 0 | 0 | 0 | 0 | 70 | 7 | 10 | 223 | 57 | 230 | 137 | 242 | 140 | 382 |
| O-1 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 24 | 1 | 4 | 253 | 109 | 254 | 137 | 256 | 140 | 396 |
| TOT OFR | 8 | 1 | 419 | 76 | 1 | 1 | 4 | 0 | 432 | 78 | 0 | 0 | 4 | 2 | 0 | 426 | 129 | 78 | 1940 | 465 | 2073 | 971 | 2505 | 1049 | 3554 |
| W-5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W-4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W-3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W-2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W-1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOT WO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E-9 | 0 | 0 | 69 | 4 | 0 | 0 | 0 | 0 | 69 | 4 | 0 | 0 | 1 | 0 | 0 | 2 | 18 | 3 | 57 | 11 | 76 | 16 | 145 | 20 | 165 |
| E-8 | 0 | 1 | 103 | 13 | 0 | 0 | 0 | 0 | 103 | 14 | 0 | 0 | 0 | 1 | 0 | 8 | 26 | 3 | 173 | 29 | 199 | 41 | 302 | 55 | 357 |
| E-7 | 11 | 0 | 437 | 72 | 2 | 0 | 1 | 0 | 451 | 72 | 0 | 0 | 5 | 0 | 0 | 38 | 206 | 49 | 763 | 91 | 974 | 178 | 1425 | 250 | 1675 |
| E-6 | 23 | 0 | 605 | 101 | 2 | 0 | 5 | 1 | 635 | 102 | 0 | 0 | 9 | 0 | 0 | 98 | 334 | 67 | 1139 | 145 | 1482 | 310 | 2117 | 412 | 2529 |
| E-5 | 36 | 1 | 793 | 163 | 2 | 1 | 2 | 0 | 833 | 165 | 0 | 0 | 24 | 3 | 0 | 617 | 503 | 154 | 2030 | 332 | 2557 | 1106 | 3390 | 1271 | 4661 |
| E-4 | 8 | 1 | 171 | 56 | 0 | 0 | 435 | 187 | 614 | 244 | 3 | 0 | 38 | 6 | 0 | 1207 | 438 | 168 | 1939 | 517 | 2418 | 1898 | 3032 | 2142 | 5174 |
| E-3 | 3 | 0 | 19 | 16 | 0 | 0 | 742 | 319 | 764 | 335 | 3 | 0 | 44 | 9 | 0 | 936 | 255 | 107 | 2448 | 686 | 2750 | 1738 | 3514 | 2073 | 5587 |
| E-2 | 0 | 0 | 2 | 0 | 0 | 0 | 216 | 111 | 218 | 111 | 0 | 0 | 12 | 9 | 0 | 189 | 58 | 24 | 819 | 235 | 889 | 458 | 1107 | 569 | 1676 |
| E-1 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 25 | 34 | 25 | 0 | 1 | 15 | 0 | 0 | 5 | 13 | 3 | 469 | 269 | 497 | 277 | 531 | 302 | 833 |
| TOT EN | 81 | 3 | 2199 | 425 | 6 | 1 | 1435 | 643 | 3721 | 1072 | 6 | 1 | 148 | 28 | 0 | 3100 | 1851 | 578 | 9837 | 2315 | 11842 | 6022 | 15563 | 7094 | 22657 |
| COL TOT | 89 | 4 | 2618 | 501 | 7 | 2 | 1439 | 643 | 4153 | 1150 | 6 | 1 | 152 | 30 | 0 | 3526 | 1980 | 656 | 11777 | 2780 | 13915 | 6993 | 18068 | 8143 | 26211 |

NOTES:
1. Air Force data is as of September 30, 1999. Air Force source file is the Air Force Personnel Data System.
2. Air Force strength data is as of September 30, 1999.
3. M = Male; F = Female; TOT OFR = Total Officer; TOT WO = Total Warrant Officer; TOT EN = Total Enlisted; COL TOT = Column Total.

**AIR FORCE NONDEPLOYABLE UNIT PERSONNEL (NUMBER BY CATEGORY, GRADE, AND GENDER) (BY PERCENT)**

Table F-30

| | | | PERMANENT | | | | | | | | TEMPORARY | | | | | | | | | | | | TOTAL | | |
| GRADE | HIV + M | HIV + F | MEDICAL PERMANENT M | MEDICAL PERMANENT F | HAZARDOUS DUTY RESTRICTION M | HAZARDOUS DUTY RESTRICTION F | COUNTRY RESTRICTION M | COUNTRY RESTRICTION F | TOTAL PERMANENT M | TOTAL PERMANENT F | AWOL M | AWOL F | LEGAL PROCESSING M | LEGAL PROCESSING F | PREGNANCY M | PREGNANCY F | MEDICAL TEMPORARY M | MEDICAL TEMPORARY F | ADMINISTRATIVE M | ADMINISTRATIVE F | TOTAL TEMPORARY M | TOTAL TEMPORARY F | AIR FORCE NONDEPLOYABLE UNIT PERSONNEL M | AIR FORCE NONDEPLOYABLE UNIT PERSONNEL F | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| O-6 | 0.0 | 0.0 | 1.9 | 2.7 | 0.0 | 0.0 | 0.1 | 0.0 | 2.0 | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.7 | 2.8 | 2.7 | 3.1 | 3.4 | 5.1 | 6.1 | 5.2 |
| O-5 | 0.0 | 0.0 | 1.4 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 1.4 | 1.6 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.8 | 0.4 | 0.8 | 2.9 | 3.0 | 3.3 | 4.7 | 4.7 | 6.3 | 4.9 |
| O-4 | 0.0 | 0.0 | 1.0 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.7 | 0.3 | 0.8 | 3.7 | 4.4 | 4.0 | 8.9 | 5.0 | 10.0 | 5.7 |
| O-3 | 0.0 | 0.0 | 0.6 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.8 | 0.3 | 0.8 | 3.7 | 3.8 | 4.0 | 10.4 | 4.6 | 11.0 | 5.8 |
| O-2 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.2 | 0.2 | 0.7 | 4.9 | 4.3 | 5.1 | 10.2 | 5.3 | 10.5 | 6.5 |
| O-1 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.3 | 0.0 | 0.4 | 9.0 | 10.6 | 9.0 | 13.3 | 9.1 | 13.6 | 10.3 |
| TOT OFR | 0.0 | 0.0 | 0.8 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.2 | 0.3 | 0.8 | 3.9 | 4.6 | 4.2 | 9.5 | 5.1 | 10.3 | 6.0 |
| W-5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| W-4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| W-3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| W-2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| W-1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOT WO | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| E-9 | 0.0 | 0.0 | 2.7 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 1.1 | 2.3 | 3.9 | 3.0 | 5.6 | 5.7 | 7.0 | 5.9 |
| E-8 | 0.0 | 0.1 | 2.1 | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 2.1 | 2.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 1.2 | 0.5 | 0.4 | 3.5 | 4.3 | 4.0 | 6.1 | 6.1 | 8.1 | 6.3 |
| E-7 | 0.0 | 0.0 | 1.8 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 0.8 | 1.7 | 3.1 | 3.1 | 4.0 | 6.0 | 5.9 | 8.5 | 6.1 |
| E-6 | 0.1 | 0.0 | 1.8 | 2.2 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 2.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 | 1.0 | 1.5 | 3.3 | 3.2 | 4.3 | 6.9 | 6.2 | 9.2 | 6.5 |
| E-5 | 0.1 | 0.0 | 1.4 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 1.5 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.9 | 0.9 | 1.5 | 3.5 | 3.2 | 4.5 | 10.6 | 5.9 | 12.2 | 6.9 |
| E-4 | 0.0 | 0.0 | 0.4 | 0.4 | 0.0 | 0.0 | 0.9 | 1.3 | 1.3 | 1.6 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 8.2 | 0.9 | 1.1 | 4.1 | 3.5 | 5.1 | 12.8 | 6.4 | 14.5 | 8.3 |
| E-3 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 2.3 | 2.9 | 2.3 | 3.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 8.4 | 0.8 | 1.0 | 7.5 | 6.2 | 8.4 | 15.6 | 10.7 | 18.6 | 12.7 |
| E-2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 | 3.5 | 2.7 | 3.5 | 0.0 | 0.0 | 0.1 | 0.3 | 0.0 | 5.9 | 0.7 | 0.7 | 10.1 | 7.3 | 11.0 | 14.2 | 13.7 | 17.7 | 14.8 |
| E-1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.8 | 5.2 | 3.8 | 5.2 | 0.0 | 0.0 | 1.7 | 0.0 | 0.0 | 1.0 | 1.5 | 0.6 | 52.9 | 56.3 | 56.1 | 57.9 | 59.9 | 63.2 | 61.1 |
| TOT EN | 0.0 | 0.0 | 1.0 | 0.9 | 0.0 | 0.0 | 0.7 | 1.3 | 1.8 | 2.2 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 6.4 | 0.9 | 1.2 | 4.6 | 4.8 | 5.6 | 12.4 | 7.3 | 14.6 | 8.7 |
| COL TOT | 0.0 | 0.0 | 1.0 | 0.9 | 0.0 | 0.0 | 0.5 | 1.1 | 1.6 | 2.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 6.0 | 0.8 | 1.1 | 4.5 | 4.7 | 5.3 | 11.9 | 6.9 | 13.9 | 8.2 |

NOTES:
1. Air Force data is as of September 30, 1999. Air Force source file is the Air Force Personnel Data System.
2. Air Force strength data is as of September 30, 1999.
3. M = Male; F = Female; TOT OFR = Total Officer; TOT WO = Total Warrant Officer; TOT EN = Total Enlisted; COL TOT = Column Total.

## DOD NONDEPLOYABLE UNIT PERSONNEL (NUMBER BY CATEGORY, GRADE, AND GENDER)

Table F-31

| | HIV+ | | PERMANENT | | | | | | | | AWOL | | TEMPORARY | | | | | | | | | | TOTAL | | |
| GRADE | | | MEDICAL PERMANENT | | HAZARDOUS DUTY RESTRICTION | | COUNTRY RESTRICTION | | TOTAL PERMANENT | | | | LEGAL PROCESSING | | PREGNANCY | | MEDICAL TEMPORARY | | ADMINISTRATIVE | | TOTAL TEMPORARY | | DOD NONDEPLOYABLE UNIT PERSONNEL | | TOTAL |
| | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| O-6 | 7 | 1 | 91 | 11 | 1 | 0 | 3 | 0 | 102 | 12 | 0 | 0 | 2 | 0 | 0 | 0 | 70 | 22 | 129 | 15 | 201 | 37 | 303 | 49 | 352 |
| O-5 | 16 | 1 | 162 | 31 | 0 | 0 | 0 | 0 | 178 | 32 | 0 | 0 | 3 | 1 | 0 | 17 | 175 | 42 | 422 | 65 | 600 | 125 | 778 | 157 | 935 |
| O-4 | 17 | 0 | 161 | 56 | 5 | 2 | 1 | 1 | 184 | 59 | 0 | 0 | 11 | 1 | 0 | 133 | 212 | 105 | 739 | 140 | 962 | 379 | 1146 | 438 | 1584 |
| O-3 | 8 | 1 | 157 | 49 | 7 | 0 | 1 | 0 | 173 | 50 | 0 | 0 | 31 | 5 | 0 | 369 | 282 | 145 | 978 | 227 | 1291 | 746 | 1464 | 796 | 2260 |
| O-2 | 1 | 0 | 37 | 15 | 1 | 0 | 0 | 0 | 39 | 15 | 1 | 0 | 17 | 13 | 0 | 160 | 89 | 73 | 290 | 79 | 397 | 325 | 436 | 340 | 776 |
| O-1 | 1 | 0 | 9 | 7 | 0 | 1 | 0 | 0 | 10 | 8 | 1 | 0 | 4 | 1 | 0 | 61 | 36 | 27 | 1290 | 336 | 1331 | 425 | 1341 | 433 | 1774 |
| TOT OFR | 50 | 3 | 617 | 169 | 14 | 3 | 5 | 1 | 686 | 176 | 2 | 0 | 68 | 21 | 0 | 740 | 864 | 414 | 3848 | 862 | 4782 | 2037 | 5468 | 2213 | 7681 |
| W-5 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 6 | 0 | 18 | 0 | 18 |
| W-4 | 1 | 0 | 19 | 3 | 3 | 0 | 0 | 0 | 23 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | 2 | 4 | 0 | 28 | 2 | 51 | 5 | 56 |
| W-3 | 2 | 0 | 24 | 1 | 3 | 0 | 0 | 0 | 29 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 24 | 7 | 8 | 1 | 33 | 8 | 62 | 9 | 71 |
| W-2 | 0 | 0 | 10 | 4 | 4 | 0 | 0 | 0 | 14 | 4 | 0 | 0 | 11 | 2 | 0 | 9 | 27 | 18 | 8 | 3 | 46 | 32 | 60 | 36 | 96 |
| W-1 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 4 | 0 | 0 | 2 | 11 | 5 | 4 | 2 | 19 | 9 | 22 | 10 | 32 |
| TOT WO | 4 | 0 | 67 | 9 | 10 | 0 | 0 | 0 | 81 | 9 | 1 | 0 | 17 | 2 | 0 | 11 | 90 | 32 | 24 | 6 | 132 | 51 | 213 | 60 | 273 |
| E-9 | 6 | 0 | 109 | 7 | 0 | 0 | 0 | 0 | 115 | 7 | 0 | 0 | 4 | 0 | 0 | 2 | 106 | 8 | 191 | 15 | 301 | 25 | 416 | 32 | 448 |
| E-8 | 11 | 3 | 193 | 39 | 12 | 0 | 0 | 0 | 216 | 42 | 0 | 0 | 3 | 1 | 0 | 14 | 242 | 43 | 824 | 79 | 1069 | 137 | 1285 | 179 | 1464 |
| E-7 | 76 | 2 | 796 | 182 | 27 | 1 | 0 | 0 | 899 | 184 | 0 | 1 | 82 | 1 | 0 | 80 | 973 | 226 | 3099 | 301 | 4154 | 609 | 5053 | 793 | 5846 |
| E-6 | 194 | 10 | 982 | 213 | 14 | 1 | 6 | 1 | 1196 | 225 | 35 | 3 | 125 | 16 | 0 | 329 | 1733 | 335 | 4170 | 476 | 6063 | 1159 | 7259 | 1384 | 8643 |
| E-5 | 235 | 20 | 1162 | 294 | 14 | 5 | 0 | 0 | 1411 | 319 | 87 | 5 | 259 | 44 | 0 | 1281 | 2301 | 533 | 3437 | 595 | 6084 | 2458 | 7495 | 2777 | 10272 |
| E-4 | 94 | 11 | 668 | 387 | 5 | 0 | 377 | 141 | 1144 | 539 | 273 | 13 | 657 | 137 | 0 | 3253 | 2760 | 897 | 2785 | 786 | 6475 | 5086 | 7619 | 5625 | 13244 |
| E-3 | 23 | 4 | 222 | 98 | 1 | 0 | 730 | 308 | 976 | 410 | 536 | 33 | 769 | 17 | 0 | 2540 | 2099 | 720 | 2970 | 912 | 6374 | 4222 | 7350 | 4632 | 11982 |
| E-2 | 6 | 1 | 78 | 28 | 0 | 0 | 290 | 140 | 374 | 169 | 597 | 46 | 808 | 83 | 0 | 669 | 574 | 211 | 1184 | 302 | 3163 | 1311 | 3537 | 1480 | 5017 |
| E-1 | 1 | 1 | 37 | 5 | 0 | 0 | 176 | 68 | 214 | 74 | 600 | 50 | 1970 | 196 | 0 | 78 | 130 | 48 | 877 | 338 | 3577 | 710 | 3791 | 784 | 4575 |
| TOT EN | 646 | 52 | 4247 | 1253 | 73 | 6 | 1579 | 658 | 6545 | 1969 | 2128 | 151 | 4677 | 495 | 0 | 8246 | 10918 | 3021 | 19537 | 3804 | 37260 | 15717 | 43805 | 17686 | 61491 |
| COL TOT | 700 | 55 | 755 | 1431 | 97 | 9 | 1584 | 659 | 7312 | 2154 | 2131 | 151 | 4762 | 518 | 0 | 8997 | 11872 | 3467 | 23409 | 4672 | 42174 | 17805 | 49486 | 19959 | 69445 |

NOTES:
1. DoD data is a composite of Service data. Service data as of dates are: Army – September 15, 1999; Navy – September 30, 1999; Marine Corps – September 30, 1999; Air Force – September 30, 1999.
2. M = Male; F = Female; TOT OFR = Total Officer; TOT WO = Total Warrant Officer; TOT EN = Total Enlisted; COL TOT = Column Total.
3. Unique record for each service member.

**DOD NONDEPLOYABLE UNIT PERSONNEL (NUMBER BY CATEGORY, GRADE, AND GENDER) (BY PERCENT)**

Table F-32

| GRADE | PERMANENT | | | | | | | | | | TEMPORARY | | | | | | | | | | | | TOTAL | | |
| | HIV+ | | MEDICAL PERMANENT | | HAZARDOUS DUTY RESTRICTION | | COUNTRY RESTRICTION | | TOTAL PERMANENT | | AWOL | | LEGAL PROCESSING | | PREGNANCY | | MEDICAL TEMPORARY | | ADMINISTRATIVE | | TOTAL TEMPORARY | | DOD NONDEPLOYABLE UNIT PERSONNEL | | TOTAL |
| | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| O-6 | 0.1 | 0.1 | 0.9 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 2.5 | 1.3 | 1.7 | 2.0 | 4.2 | 3.0 | 5.5 | 3.2 |
| O-5 | 0.1 | 0.0 | 0.7 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.7 | 1.3 | 1.8 | 2.1 | 2.5 | 4.0 | 3.3 | 5.0 | 3.5 |
| O-4 | 0.0 | 0.0 | 0.5 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 0.6 | 1.9 | 2.1 | 2.6 | 2.7 | 7.0 | 3.3 | 8.1 | 3.9 |
| O-3 | 0.0 | 0.0 | 0.3 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.5 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 3.7 | 0.5 | 1.4 | 1.9 | 2.3 | 2.5 | 7.4 | 2.8 | 7.9 | 3.6 |
| O-2 | 0.0 | 0.0 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.0 | 0.0 | 0.1 | 0.3 | 0.0 | 3.7 | 0.4 | 1.7 | 1.5 | 1.8 | 2.0 | 7.5 | 2.2 | 7.8 | 3.2 |
| O-1 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.3 | 0.9 | 10.5 | 10.8 | 10.8 | 13.6 | 10.9 | 13.9 | 11.5 |
| TOT OFR | 0.0 | 0.0 | 0.4 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.7 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 2.7 | 0.6 | 1.5 | 2.5 | 3.2 | 3.1 | 7.6 | 3.6 | 8.2 | 4.2 |
| W-5 | 0.0 | 0.0 | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 | 1.4 | 0.0 | 4.1 | 0.0 | 4.0 |
| W-4 | 0.0 | 0.0 | 0.9 | 5.5 | 0.1 | 0.0 | 0.0 | 0.0 | 1.1 | 5.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 3.6 | 0.2 | 0.0 | 1.4 | 3.6 | 2.5 | 9.1 | 2.7 |
| W-3 | 0.1 | 0.0 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.8 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 4.1 | 0.2 | 0.6 | 0.9 | 4.7 | 1.7 | 5.3 | 1.8 |
| W-2 | 0.0 | 0.0 | 0.2 | 0.7 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.7 | 0.0 | 0.0 | 0.2 | 0.4 | 0.0 | 1.7 | 0.5 | 3.3 | 0.1 | 0.6 | 0.8 | 5.9 | 1.0 | 6.6 | 1.5 |
| W-1 | 0.1 | 0.0 | 0.1 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.5 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 1.1 | 0.6 | 2.7 | 0.2 | 1.1 | 1.0 | 4.8 | 1.1 | 5.3 | 1.5 |
| TOT WO | 0.0 | 0.0 | 0.5 | 0.9 | 0.1 | 0.0 | 0.0 | 0.0 | 0.6 | 0.9 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 | 1.1 | 0.6 | 3.3 | 0.2 | 0.6 | 0.9 | 5.3 | 1.5 | 6.2 | 1.8 |
| E-9 | 0.1 | 0.0 | 1.2 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 1.2 | 1.3 | 2.1 | 2.5 | 3.3 | 4.2 | 4.6 | 5.4 | 4.6 |
| E-8 | 0.0 | 0.1 | 0.9 | 1.8 | 0.1 | 0.0 | 0.0 | 0.0 | 1.0 | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 1.1 | 1.9 | 3.7 | 3.5 | 4.8 | 6.2 | 5.7 | 8.0 | 6.0 |
| E-7 | 0.1 | 0.0 | 0.9 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 2.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.9 | 1.2 | 2.4 | 3.7 | 3.2 | 5.0 | 6.6 | 6.0 | 8.5 | 6.3 |
| E-6 | 0.1 | 0.1 | 0.7 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 1.4 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 2.1 | 1.3 | 2.1 | 3.1 | 3.0 | 4.5 | 7.3 | 5.3 | 8.7 | 5.7 |
| E-5 | 0.1 | 0.1 | 0.6 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 1.2 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 | 4.7 | 1.2 | 1.9 | 1.8 | 2.2 | 3.3 | 9.0 | 4.0 | 10.1 | 4.8 |
| E-4 | 0.0 | 0.0 | 0.3 | 0.9 | 0.0 | 0.0 | 0.2 | 0.3 | 0.6 | 1.2 | 0.1 | 0.0 | 0.3 | 0.3 | 0.0 | 7.4 | 1.3 | 2.1 | 1.3 | 1.8 | 3.1 | 11.6 | 3.7 | 12.9 | 5.3 |
| E-3 | 0.0 | 0.0 | 0.2 | 0.3 | 0.0 | 0.0 | 0.5 | 1.0 | 0.7 | 1.4 | 0.4 | 0.1 | 0.5 | 0.1 | 0.0 | 8.5 | 1.5 | 2.4 | 2.1 | 3.1 | 4.5 | 14.2 | 5.2 | 15.6 | 7.0 |
| E-2 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 | 0.0 | 0.4 | 1.1 | 0.6 | 1.3 | 0.9 | 0.4 | 1.2 | 0.6 | 0.0 | 5.1 | 0.9 | 1.6 | 1.8 | 2.3 | 4.8 | 10.0 | 5.4 | 11.3 | 6.4 |
| E-1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.5 | 1.0 | 0.6 | 1.1 | 1.7 | 0.7 | 5.5 | 2.9 | 0.0 | 1.2 | 0.4 | 0.7 | 2.4 | 5.0 | 9.9 | 10.6 | 10.5 | 11.7 | 10.7 |
| TOT EN | 0.1 | 0.0 | 0.5 | 0.8 | 0.0 | 0.0 | 0.2 | 0.4 | 0.7 | 1.3 | 0.2 | 0.1 | 0.5 | 0.3 | 0.0 | 5.6 | 1.2 | 2.0 | 2.2 | 2.6 | 4.2 | 10.6 | 4.9 | 11.9 | 5.9 |
| COL TOT | 0.1 | 0.0 | 0.1 | 0.8 | 0.0 | 0.0 | 0.1 | 0.4 | 0.7 | 1.2 | 0.2 | 0.1 | 0.5 | 0.3 | 0.0 | 5.1 | 1.1 | 2.0 | 2.2 | 2.6 | 4.0 | 10.1 | 4.7 | 11.3 | 5.6 |

NOTES:
1. DoD data is a composite of Service data. Service data as of dates are: Army – September 15, 1999; Navy – September 30, 1999; Marine Corps – September 30, 1999; Air Force – September 30, 1999.
2. M = Male; F = Female; TOT OFR = Total Officer; TOT WO = Total Warrant Officer; TOT EN = Total Enlisted; COL TOT = Column Total.
3. Unique record for each service member.

## NATIONAL SECURITY AND THE LAW OF THE SEA CONVENTION

Internationally agreed-upon freedoms of navigation and overflight are essential to U.S. economic and national security. As a maritime nation, the United States depends upon freedoms of navigation and overflight in order to support global economy. The complex geo-political landscape of the post-Cold War era also puts a premium on military forces that can move quickly anywhere in the world's oceans to provide presence for diplomatic purposes, to project power from the sea, to enforce United Nations sanctions, or to conduct humanitarian operations. In the past decade, U.S. military forces have been called upon to participate in more than a dozen joint and combined operations that were critically dependent on internationally recognized transit rights and high seas freedoms of navigation and overflight.

The customary international freedoms of navigation and overflight that are critical to U.S. economic and national security are codified in the Law of the Sea Convention. To date, 131 nations and the European Community are parties to the Convention. The parties include most key U.S. allies, many important non-aligned states, and all the major maritime powers except the United States. In October 1994, the President transmitted the Convention and its Implementing Agreement to the Senate for advice and consent. The Senate Foreign Relations Committee has not yet scheduled ratification hearings.

DoD continues to fully support U.S. accession to the Law of the Sea Convention, because the Convention supports the full range of U.S. interests in ocean activities—most importantly, an ocean regime strongly supportive of operational rights essential to the planning and execution of the national defense strategy. The Convention guarantees the right of innocent passage through foreign territorial seas and constrains coastal states from unreasonably extending their maritime boundaries. The Convention also reaffirms the legal right to move military forces through international straits, archipelagic sea lanes, and international waters and airspace, thereby preserving the ability to deter and respond to threats whenever and wherever required pursuant to U.S. national security objectives.

The end of the Cold War has not changed the fact that many economic, political, and military interests are located far away from U.S. shores. Thus, mobility remains a crucial requirement for U.S. military forces. Without international respect for the freedoms of navigation and overflight set forth in the Convention, the exercise of U.S. forces' mobility rights could be jeopardized. Continued failure to join the Convention could diminish U.S. influence and leadership in international ocean affairs, and could also undercut the ability to resist excessive maritime claims worldwide.

Historically, the nation's security has depended upon its ability to conduct military operations on, over, and under the world's oceans. The best guarantee that this access to the oceans will continue in the years ahead is for the United States to become a party to the Law of the Sea Convention.

## FREEDOM OF NAVIGATION

For 20 years, the U.S. Freedom of Navigation program has ensured that excessive coastal state claims over the world's oceans and airspace are repeatedly challenged. By diplomatic protests and operational assertions, the United States has insisted upon adherence by the nations of the world to the international law of the sea, as reflected in the UN Law of the Sea Convention. A significant majority of countries (131) are now Parties to the Convention, and there is an encouraging trend toward the rolling-back of excessive maritime claims. Nonetheless, some coastal states continue to assert maritime claims inconsistent with international law, which left unchallenged would limit navigational freedoms vital to U.S. national security and essential to peaceful uses of the world's oceans.

In FY 1999, U.S. armed forces conducted operational assertions challenging the excessive maritime claims as listed below. In addition, military vessels and aircraft frequently conducted routine transits through international straits, such as the Straits of Gibraltar, Hormuz, and Malacca. Air and surface units also transited the Indonesian Archipelago in archipelagic sea lanes passage on 22 occasions and transited the Philippine Archipelago by exercising high seas freedoms, transit passage, and innocent passage, as applicable, on 34 occasions. Combined with robust and highly visible routine operations by U.S. forces on, over, and under the world's oceans, and strong United States support for the navigational provisions of the UN Law of the Sea Convention, Freedom of Navigation operations have continued to underscore the U.S. commitment to a stable legal regime for the world's oceans.

On September 2, 1999, the Secretaries of Commerce and Navy, on behalf of the entire Cabinet, submitted to President Clinton a report entitled *Turning to the Sea: America's Ocean Future*. This report sets forth the Cabinet's collective recommendations for U.S. oceans policy heading into the 21st century, and it includes a specific recommendation to expand the U.S. Freedom of Navigation program to exercise U.S. navigational rights and freedoms in areas of unacceptable maritime claims. Guided by this recommendation, the U.S. armed forces will make even greater efforts to assert U.S. navigation and overflight rights in order to promote both global stability and U.S. national security.

| FY 1999 DOD OPERATIONAL ASSERTIONS | |
|---|---|
| **Country** | **Excessive Claims Challenged** |
| Albania | Prior permission for warship to enter the territorial sea |
| Algeria | Prior permission for warship to enter the territorial sea |
| Cambodia | Excessive straight baselines; claimed security zone; prior permission for warship to enter the territorial sea and security zone |
| Djibouti | Prior notification for nuclear-powered vessel to enter the territorial sea |
| Ecuador | 200 nautical mile (nm) territorial sea |
| Egypt | Prior permission for warship to enter the territorial sea |
| El Salvador | 200nm territorial sea |
| India | Prior notification for warship to enter the territorial sea; prior permission required for military exercises and maneuvers in exclusive economic zone; Gulf of Manaar as historic waters |
| Iran | Excessive straight baselines; prior permission for warship to enter the territorial sea |
| Japan | Excessive straight baselines |
| Liberia | 200nm territorial sea |
| Malaysia | Prior permission for military exercises in exclusive economic zone |
| Malta | Prior permission for warship to enter the territorial sea |

| FY 1999 DOD OPERATIONAL ASSERTIONS (Continued) | |
|---|---|
| Nicaragua | 200nm territorial sea |
| Pakistan | Excessive straight baselines; claimed security zone |
| Philippines | Excessive straight baselines; claims archipelagic waters as internal waters |
| Romania | Prior permission for warships to enter the territorial sea |
| Saudi Arabia | Claimed security zone |
| Seychelles | Prior notification for warship to enter the territorial sea |
| Sierra Leone | 200nm territorial sea |
| South Korea | Excessive straight baselines |
| Sri Lanka | Prior permission for warships to enter the territorial sea; Gulf of Manaar as historic waters |
| Sudan | Claimed security zone |
| Venezuela | Claimed security zone |
| Vietnam | Excessive straight baselines; claimed security zone; prior permission for warship to enter the territorial sea and contiguous zone; warship must place weapons in nonoperative positions prior to entering contiguous zone; Gulf of Tonkin as historic waters |
| Yemen | Prior permission for nuclear-powered warship to enter the territorial sea; claimed security zone |

## GOVERNMENT PERFORMANCE AND RESULTS ACT
## PERFORMANCE PLAN FOR FY 2001
## PERFORMANCE REPORT FOR FY 1999

## OVERVIEW OF THE DOD STRATEGIC PLAN

Since the founding of the Republic, the United States has embraced several fundamental and enduring objectives. Principal among these are maintaining the sovereignty, political freedom, and independence of the United States with its values, institutions, and territory intact; protecting the lives and personal safety of Americans, both at home and abroad; and providing for the well-being and prosperity of the nation and its people.

Achieving these basic objectives in an increasingly interdependent world requires fostering an international environment in which critical regions are stable, at peace, and free from domination by hostile powers; the global economy and free trade are growing; democratic norms and respect for human rights are widely accepted; nuclear, biological, and chemical weapons and other potentially destabilizing technologies are minimized; and the international community is willing and able to prevent and, if necessary, respond to calamitous events. The United States seeks to play an international leadership role by working closely and cooperatively with nations that share its values and goals and by influencing those that can affect U.S. national well-being.

These fundamental objectives provide the foundation for the national security strategy and for U.S. defense policy and planning. It is from them that the mission, strategic vision, and corporate goals of the Department of Defense (DoD) derive.

### DoD Mission

The mission of the Department of Defense is to support and defend the Constitution of the United States; to provide for the common defense of the nation, its citizens, and its allies; and to protect and advance U.S. interests around the world. To accomplish this mission, the Department maintains trained forces ready to respond to threats to U.S. security arising anywhere on the globe.

In peacetime, the United States works with friends and allies to promote a stable world that supports economic growth and provides opportunities for emerging democracies. The routine deployment of U.S. forces overseas, combined with the maintenance of ready forces at home, promotes stability and deters the use of force against U.S. interests. The same military forces that help shape the international environment can also respond quickly to threats to U.S. security when crises arise.

### DoD Vision

In support of its basic mission, the Department of Defense:

- Fields the best trained, best equipped, best prepared fighting force in the world.

- Supports alliances and security relationships that protect and advance U.S. security interests.

- Furthers national interests by working effectively with other federal agencies, Congress, and the private sector.

- Serves as a model of effective, efficient, innovative management and leadership.

### DoD Corporate-Level Goals

DoD has established two corporate-level goals:

- Goal 1. Shape the international security environment and respond to the full spectrum of crises by providing appropriately sized, positioned, and mobile forces.

- Goal 2. Prepare now for an uncertain future by pursuing a focused modernization effort that maintains U.S. qualitative superiority in key warfighting capabilities. Transform the force by exploiting the Revolution in Military Affairs and reengineer the Department to achieve a 21st century infrastructure.

The Department's corporate goals are fully consistent with the objectives articulated in the 1997 Quadrennial Defense Review (QDR). The QDR report described the results of a definitive, overarching program evaluation undertaken by the Department, the fourth such comprehensive review conducted since the end of the Cold War. The QDR refined the force and policy analyses begun in the 1991 Base Force Review, the 1993 Bottom-Up Review, and the 1995 study by the Commission on Roles and Missions of the Armed Forces. By examining

America's defense needs from 1997 to 2015—the potential threats the nation might face and the strategy, force structure, readiness, infrastructure, and modernization programs needed to cope with them—the QDR provided a blueprint for a balanced and affordable defense program.

## THE ANNUAL PERFORMANCE PLAN AND REPORT

### GPRA Requirements

The Government Performance and Results Act (GPRA) seeks to improve government-wide program effectiveness, government accountability, and, ultimately, public confidence by requiring agencies to identify measurable annual performance goals, against which actual achievements can be compared. The approach taken by GPRA to linking expenditures to performance is consistent with how the Department of Defense applies its internal management process—the Planning, Programming, and Budgeting System (PPBS)—to guide the implementation of QDR decisions. The DoD budget has one principal output: military forces that are ready to go to war. Because these forces are intended to deter potential adversaries, the outcome of the Department's efforts in any given year is partially subject to global developments and political decisions. Nonetheless, the Department has developed a methodology that allows it to present output-oriented goals and accompanying measures within the context of GPRA.

As stated above, DoD's two corporate goals guide the annual implementation of the QDR through the PPBS. The corporate goals form the basis for using GPRA as a management tool, and they serve as strategic goals for the Department. The document that implemented them, the May 1997 *Report of the Quadrennial Defense Review,* is the Department's strategic plan. The strategic plan will remain in effect until revised by the next QDR in 2001, as mandated by Section 402 of the National Defense Authorization Act for FY 2000 (Public Law 106-65).

### Linking Plans to Performance

The Department's annual performance plan plots a short-term course toward achieving its multiyear strategic plan. Annual performance goals establish a measurable path to incremental achievement of the corporate goals articulated in the strategic plan. Performance goals are supported and evaluated by quantifiable output, which is assessed using performance measures or indicators. Normally, a given performance goal encompasses several performance measures and indicators. For that portion of the performance goal which they evaluate, performance measures are sufficient in themselves to judge results. Performance indicators are not sufficient to gauge the success of a program; rather, they provide meaningful insights for qualitative assessments. Together, performance measures and indicators quantify the output of defense programs for key metrics associated with providing a ready force and preparing for the future.

The Department's FY 2000 performance plan and revised FY 1999 plan, published in the February 1999 *Annual Report to the President and Congress,* established seven annual performance goals (see Table I-1). The FY 1999 and FY 2000 performance targets and metrics addressed in this report come from that document. For FY 2001, the Department has added an eighth performance goal, focusing on financial and information management. Performance against that goal will be assessed initially in the FY 2001 report, to be published in February 2002.

### Evaluating Annual Performance

The Department evaluates success in achieving the performance goals established for its budget on two levels. At a lower level of aggregation, individual performance measures and indicators are scored at the end of each fiscal year to determine how performance compared to numeric targets set when the budget was submitted. As noted earlier, each set of measures and indicators supports a common annual performance goal; it is at this level that performance against the targets is reported and discussed in subsequent sections of this appendix.

At the higher level, annual performance goals are evaluated in two ways. First, results for each of the subordinate measures and indicators are evaluated within the context of overall program performance. Second, a determination is made as to whether a shortfall in expected performance for any single metric, or for any set of supporting metrics, will put at risk achievement of the associated corporate goal. This subjective determination is trend-based and is inherently cumulative: a single year of poor performance may not signal that a corporate goal is at risk, although several years of unsatisfactory performance almost certainly will.

| Linkage of Corporate Goals to Annual Performance Goals | Table I-1 |
|---|---|
| **Corporate Goal 1:**<br>**SHAPE AND RESPOND** | **Corporate Goal 2:**<br>**PREPARE** |
| 1.1 Support U.S. regional security alliances through military-to-military contacts and the routine presence of ready forces overseas, maintained at force levels determined by the QDR. | 2.1 Recruit, retain, and develop personnel to maintain a highly skilled and motivated force capable of meeting tomorrow's challenges. |
| 1.2 Maintain ready forces and ensure they have the training necessary to provide the United States with the ability to shape the international security environment and respond to a full spectrum of crises. | 2.2 Transform U.S. military forces for the future. |
| 1.3 Maintain the capability to move military forces from the United States to any location in the world in response to aggression, using a combination of airlift, sealift, and prepositioned equipment. | 2.3 Streamline the DoD infrastructure by redesigning the Department's support structure and pursuing business practice reforms. |
| | 2.4 Meet combat forces' needs smarter and faster, with products and services that work better and cost less, by improving the efficiency of DoD's acquisition processes. |
| | 2.5 Improve DoD financial and information management (**New Goal for FY 2001**) |

Clearly, performance shortfalls due to internal management factors may receive higher priority for remedial action than those resulting from external events (such as international crises or contingencies), where performance shortfalls often can be overcome by restoring diverted resources or reinstating disrupted training schedules. However, repeated disruptions due to unexpected contingencies, resulting in consecutive years of performance shortfalls, could lead the Department to adjust its performance expectations.

### Establishing Performance Targets and Analyzing Performance Data

The metrics incorporated in the Department's performance plan derive from the goals established for implementing the QDR. They represent key criteria used by the Secretary of Defense in evaluating program proposals put forward by the military services and defense agencies during the Department's annual program and budget reviews. A DoD-wide working group—composed of representatives from the Office of the Secretary of Defense (OSD), the Joint Staff, the Services, and defense agencies—helps draft annual updates to the GPRA performance plan, consistent with how the Department monitors QDR implementation through the PPBS process. The group also reviews verification and validation (V&V) data supporting individual performance metrics for accuracy and completeness.

In June 1999, the DoD Comptroller designated a primary OSD sponsor for each GPRA annual performance goal. The sponsors are responsible for reporting on annual performance and documenting V&V information.

The remaining sections of this report assess the Department's progress in meeting its FY 1999 performance goals and identify performance goals for FY 2001. The presentation for each performance goal starts with a general discussion of the goal's intent, its relationship to the corporate goal that it supports, and any major changes to the goal for FY 2001 and beyond. Next, an evaluation of FY 1999 performance is presented, followed by a discussion of the subordinate metrics. The discussions:

- Describe how the individual metrics contribute to the associated performance goal.

- Summarize the V&V methodology supporting each metric, including weaknesses and areas for improvement.

- Highlight factors that shaped FY 1999 performance.

- Restate the FY 2000 performance targets (from the FY 2000 GPRA plan).

- Predict, where applicable, how FY 1999 performance might affect the ability of the Department to achieve its performance targets in FY 2000.

- Set FY 2001 performance targets.

Although no metrics from the FY 2000 GPRA plan have been discontinued, several have been renumbered to reflect a more logical grouping for reporting performance. Specifically, last year's Performance Measure 2.4.8 has been redesignated as measure 2.3.9 in this year's report. All other changes merely reorder metrics under their original annual performance goal.

## PERFORMANCE GOAL 1.1 – SUPPORT REGIONAL SECURITY ALLIANCES

U.S. armed forces promote regional stability in many ways that support the national security strategy. In regions where the United States has vital and important interests, the routine presence of U.S. forces helps bolster the security of allies and friends. At the same time, interactions between forward-deployed forces and regional militaries serve to strengthen and adapt core alliances and coalitions to meet evolving security demands. In addition, the U.S. military often serves as a preferred means of engagement with countries that are neither staunch friends nor confirmed foes. Such contacts build constructive security relationships. They help promote the development of democratic institutions today and prevent these countries from becoming adversaries tomorrow. Through both example and enforcement, U.S. forces encourage adherence to international norms and regimes that provide a foundation for peace and stability around the globe.

### Evaluation of FY 1999 Performance

The Department met or exceeded its FY 1999 overseas presence targets for Air Force and Army forces. For the Navy and Marine Corps, presence objectives were exceeded in Southwest Asia at the expense of deployments in Europe and the Pacific region. The increased naval presence in Southwest Asia was intended to ensure that U.S. involvement in Operation Allied Force would not be interpreted by Iraq as signifying a lack of commitment to U.S. allies and interests in that region. The Department expects to meet all of its overseas presence targets for FY 2000.

The Department canceled 37 of 191 overseas exercises planned for FY 1999. Twenty-two exercises were dropped because of the diversion of airlift assets, equipment, and personnel to support Operation Allied Force;

the remaining 15 exercises were forgone in order to free funding for Y2K operational evaluations directed by Congress, for which no additional resources were provided. Five new exercises conducted in FY 1999 partially offset those canceled.

The difference between planned and actual exercise performance in FY 1999 is consistent with recent experience. For example, in FY 1995 and FY 1996, the exercise program was revised to account for deployments to Bosnia, just as the FY 1999 program was adjusted to accommodate the Kosovo operation. In each case, the loss of overseas exercises was mitigated by the experience gained from actual combined operations with foreign militaries in support of humanitarian missions or crisis operations.

The number of overseas exercises has increased slightly over the past two years and is expected to remain within a range of 195 to 205 annually through FY 2002. Despite the increased pace of overseas exercises, the Department is reducing total man-days devoted to the exercise program by limiting participation to only the most essential units and personnel, shortening exercise durations to the minimum required to meet training goals, and increasing the use of simulations. These measures will strengthen military-to-military contacts while reducing deployment demands on U.S. forces.

Some difficulties may be experienced in meeting exercise targets for FY 2000. The total appropriation for exercise programs in FY 2000 represented a reduction of $34 million from the President's budget request. Additionally, the overseas exercise schedule remains vulnerable to perturbations from world events. Because some exercises must be planned two to three years in advance and others are scheduled for a particular season of the year, it is often impossible to delay an exercise in response to a contingency. In such cases, exercises must be canceled and the associated training forgone.

### Supporting Metrics: FY 1999 Performance Report and FY 2001 Performance Plan

Performance Goal 1.1 is supported by five metrics: Army, Navy, Air Force, and Marine Corps overseas presence and the overseas exercise program.

## Regional Security Metrics

```
                CORPORATE GOAL 1
                SHAPE AND RESPOND

              Performance Goal 1.1
          Support Regional Security Alliances

   Army        Navy       Air Force    Marine Corps    Overseas
  Overseas    Overseas    Overseas      Overseas      Exercises
  Presence    Presence    Presence      Presence
```
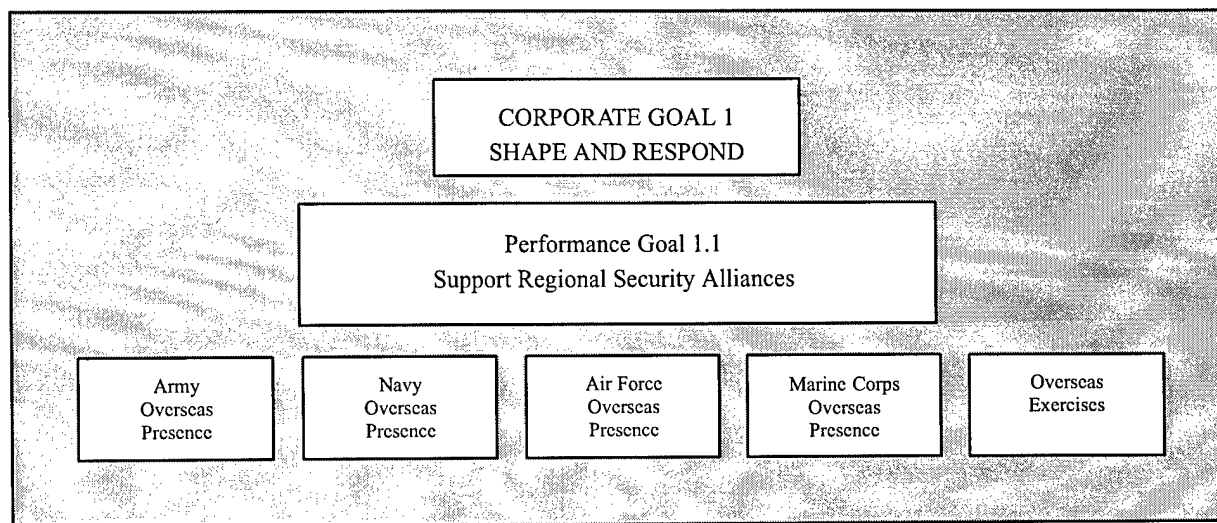
### Performance Measure 1.1.1 – Army Overseas Presence

|  | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| Mechanized Divisions in Pacific Region | 1 | 1 | 1 | 1 | 1 | 1 |
| Divisions with Elements in Europe | 2 | 2 | 2 | 2 | 2 | 2 |

**Metric Description.** The Army maintains a mechanized division in the Asian-Pacific region and two divisions with selected command, combat, and support elements in Europe. The forces stationed in Europe affirm the United States' leadership role in NATO and reinforce bilateral relations with key partners. Forward-deployed Army units in the Asian-Pacific region underscore the U.S. commitment to remain a stabilizing influence and to deter aggression on the Korean peninsula and elsewhere in the region.

**V&V Methodology.** The Army provides data on its forces for each revision of the Department's Future Years Defense Program (FYDP) database. (For more details on the FYDP system and PPBS process, see the Related Issues section at the end of this appendix.) The number of Army units deployed is obtained from major commands and is reviewed at least twice yearly by the geographic commanders in chief (CINCs) as part of their input to the PPBS management process.

**Actual and Projected Performance.** The Department met its FY 1999 performance targets for Army overseas presence. No shortfalls are projected for FY 2000.

**Performance Measure 1.1.2 – Naval Overseas Presence**
**(Percentage of time regions are covered by an aircraft carrier battle group)**

|  | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| Pacific | 100 | 67 | 100 | 81 | 100 | 100 |
| Europe | 65 | 40 | 75 | 56 | 75 | 75 |
| Southwest Asia | 80 | 82 | 75 | 100 | 75 | 75 |

**Performance Measure 1.1.3 – Marine Corps Overseas Presence**
**(Percentage of time regions are covered by a Marine expeditionary unit/amphibious ready group)**

|  | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| Pacific | 100 | 100 | 100 | 83 | 100 | 100 |
| Europe | 92 | 82 | 80 | 100 | 80 | 80 |
| Southwest Asia | 46 | 50 | 50 | 68 | 50 | 50 |

**Metric Description.** Performance Measures 1.1.2 and 1.1.3 record the percentage of time that a U.S. Navy carrier battle group (CVBG) or a Marine expeditionary unit (MEU) and amphibious ready group (ARG) is deployed in each of three regions—the Pacific, Europe, and Southwest Asia. In combination, these measures gauge the ability of naval air, land, surface, and submarine forces to rapidly respond to crises as well as engage in exercises, military-to-military contacts, and other activities in support of regional alliances.

**V&V Methodology.** Data for these measures are derived from two sources: Navy deployment schedules for CVBGs, MEUs, and ARGs, as reflected in Global Naval Force Presence (GNFP) messages issued periodically by the Chairman of the Joint Chiefs of Staff (CJCS); and OPNOTES, a text-based tactical data exchange system maintained by the Department of the Navy that documents specific data and times for the arrival and departure of CVBGs and ARGs into or out of each region. OPNOTES depicts the position of underway and deployed naval forces. In-port and homeport forces are not typically included. The system is updated daily.

Data are verified by comparing planned deployment schedules (the Chairman's GNFP message) against actual force presence (as documented by the arrival and departure dates recorded in OPNOTES). Data also are reviewed for accuracy at each Quarterly Fleet Scheduling Conference. This metric does not account for multiple CVBG or MEU coverage in a theater of operations.

**Actual and Projected Performance.** The Department met its FY 1999 performance goals for Navy and Marine Corps presence in Southwest Asia. Deployments in the Pacific fell slightly short of objectives, due to the diversion of forces to support contingency operations in Europe and Southwest Asia. While targets for ARG/MEU presence in Europe were met, the CVBG objective for that theater was not reached, due to ongoing Southwest Asian contingency deployments. Assuming a return to routine deployment patterns in Southwest Asia and absent further unanticipated requirements, the Navy and Marine Corps expect to meet their overseas presence goals in FY 2000.

| Performance Measure 1.1.4 – Air Force Overseas Presence (In FWEs) | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| Pacific | 2 | 2 | 2 | 2 | 2 | 2 |
| Europe | 2 | 2 | 2 | 2 | 2 | 2 |
| Southwest Asia | 1 | 1 | 1 | 1 | 1 | 1 |
| NOTE: FWE = fighter wing-equivalent. | | | | | | |

**Metric Description.** The Air Force keeps five FWEs forward deployed in the Pacific, Europe, and Southwest Asia in support of regional engagement and crisis response missions outlined in the QDR.

**V&V Methodology.** The Air Force provides data on the location of its forces for each update of the FYDP database. Unit deployment data are maintained by the major commands and are reviewed at least twice annually by the geographic CINCs as part of their input to the PPBS process.

**Actual and Projected Performance.** The Air Force met its FY 1999 performance targets for overseas presence. No shortfalls are projected for FY 2000.

| Performance Measure 1.1.5 – Number of Overseas Exercises | | | | | |
|---|---|---|---|---|---|
| | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| Number of Joint and Combined Exercises | 183[a] | 191[a] | 159 | 198[a] | 204 |
| [a] This metric has been reformatted to match actual management practice. The Joint Training Master Plan (JTMP) includes both joint (interservice) and combined (U.S. and foreign military) exercises. The FY 2000 GPRA performance plan, by contrast, considered only combined exercises (which account for most of the training exercises conducted overseas). To bring the GPRA metric into alignment with the JTMP's coverage, Performance Measure 1.1.5 has been recast to encompass both joint and combined exercises. | | | | | |

**Metric Description.** The overseas exercise program demonstrates U.S. resolve and the ability to project forces to locations abroad in support of national interests and commitments to allies. The program provides joint force training that emphasizes interoperability, joint warfighting doctrine, and rapid deployment. Such training, conducted in conjunction with allied or friendly militaries, provides opportunities to test and evaluate U.S. and host nation systems, lines of communication, and support agreements.

**V&V Methodology.** This metric is a simple count of joint and combined exercises completed. Its utility is ensured by rigidly defining what does (and does not) constitute a joint exercise. CJCS Manual 3500.03, *Joint Training Manual for the Armed Forces of the United States*, establishes standards for joint training in four phases: establishment of requirements; planning; execution; and assessment of results. The manual standardizes procedures for each phase of the joint training cycle and establishes criteria for reporting and evaluating performance data.

**Actual and Projected Performance.** Operation Allied Force resulted in the cancellation of 22 combined exercises; 15 other exercises were superseded by Y2K operational evaluations mandated by Congress. Countries affected by the cancellation of exercises due to Operation Allied Force were Latvia, Bahrain, Turkey, Poland, Jordan, Oman, Spain, Greece, the United Kingdom, Singapore, Romania, the Former Yugoslav Republic of Macedonia, and Germany. Countries affected by the elimination of exercises due to Y2K evaluations were Israel, the United Arab Emirates, and Canada. Five new exercises, in Central America, partially offset those canceled. Since many combined exercises in the Western Hemisphere provide disaster relief training, the exercises added after Hurricane Mitch became the basis for actual relief missions.

Absent similar unanticipated requirements, the Department expects to meet its overseas exercise goal for FY 2000.

## PERFORMANCE GOAL 1.2 – MAINTAIN TRAINED AND READY FORCES

The force structure objectives established in the QDR reflect the need for balance between investments in existing forces and adequate preparation for the future. Today's security environment presents the same pressing need for military forces that existed when the QDR was conducted. The force level objectives for FY 2001 are, therefore, essentially the same goals set in the QDR. The intent is to have forces that can fight and win two major theater wars nearly simultaneously. At the same time, the goals reflect the need for the United States to respond to smaller-scale contingencies. Although the latter deployments are much less demanding than a major theater war, they can become a high priority for the United States. That is particularly true when swift intervention of military forces is needed to contain, resolve, or mitigate the consequences of a crisis or contingency that could otherwise become far more costly and deadly.

The Department monitors the day-to-day readiness of forces through two senior forums: the Joint Monthly Readiness Review (JMRR) and the Senior Readiness Oversight Council (SROC). The JMRR provides the CJCS a tool for monitoring the overall readiness of U.S. forces. It identifies and tracks specific areas of concern for each of the CINCs, combat support agencies, and Services. JMRR assessments, as well as other DoD-wide readiness issues, are presented monthly to the SROC. Chaired by the Deputy Secretary of Defense, the SROC includes as members the Under Secretaries of Defense; the Vice Chairman of the Joint Chiefs of Staff; the Under Secretaries of the Army, Navy, and Air Force; the Chief of Staff of the Army; the Chief of Naval Operations; the Commandant of the Marine Corps; and the Chief of Staff of the Air Force. The SROC provides a forum for the Department's senior civilian and military leaders to consult on standing or emerging readiness concerns.

The readiness assessments presented to the SROC are summarized four times a year in the *Quarterly Readiness Report to Congress* (QRRC). The QRRC allows the Department to inform Congress of issues related to near-term readiness. It includes sections on readiness indicators, force tempo trends, and unit readiness ratings.

## *Evaluation of FY 1999 Performance*

The Department failed to meet some training and operational tempo targets in recent years, due largely to the demands of contingency response missions such as Operation Allied Force. Training and tempo goals reflect the Department's efforts to monitor the effects of increased peacetime deployment levels and overseas operations on smaller, post-Cold War military forces. While high tempo is not in itself a cause for concern, it serves to focus management attention on those particular units and skill groups that are repeatedly in demand for contingency operations. More frequent deployments place greater stress on individuals and families, which may ultimately affect retention. Specific deployment thresholds, to be exceeded only on approval of the Secretary of Defense, are set for low-density/high-demand units in the Department's Global Military Force Policy. The Department has implemented a variety of initiatives for FY 2000 and FY 2001 to mitigate the effects of several years of persistently high operational tempos and to avoid any long-term degradation in force readiness. Details on these initiatives are provided in Chapter 4.

Training results exhibited a more positive trend, although the Army failed to achieve its tank-mile targets and some reserve component flying-hour targets. Tank-mile training—the performance benchmark for Army ground forces—exhibited an improvement, however, over FY 1998 results for the active Army and continues to demonstrate an upward trend. Army reserve component performance for tank miles declined relative to FY 1998 levels; National Guard flying hours were about 15 percent below objectives but were improved over 1998 levels. Army execution shortfalls were the result of unexpected funding requirements in the budget year that forced the Army to divert resources from training to other programs (such as real property maintenance) that are funded through the Operation and Maintenance (O&M) account. The Army expects to meet its tank-mile goals for FY 2000 by more accurately managing O&M accounts, thus reducing the need for funding migration.

It is important to note that the Army's tank-mile program is especially sensitive to the timing as well as the availability of funding. The Army conducts battalion- and brigade-level unit training at the few installations in the United States (and the single facility in Europe) large enough to accommodate maneuvering forces. Commanders must reserve training time at these scarce maneuver areas more than a year in advance. Thus, while O&M funds used to support contingency deployments

may subsequently be restored by Congress in supplemental appropriations, it might not be possible to reschedule training activities for units that have missed their preplanned drill periods.

Overall, the Department was able to meet or exceed its FY 1999 training targets, despite disruptions to the peacetime training schedule caused by Operation Allied Force. In particular, participation in Operation Allied Force skewed Air Force flying-hour program results. U.S. Air Forces in Europe and the Air Mobility Command exceeded their flying-hour targets by 16 and 19 percent, respectively, while commands in the United States generally flew fewer hours than planned. Overall, the Air Force fell slightly short of its aggregate

flying-hour objective for FY 1999; no shortfalls are projected for FY 2000.

### *Supporting Metrics: FY 1999 Performance Report and FY 2001 Performance Plan*

Key metrics for gauging training and readiness include active and reserve force levels, deployment frequencies (for training or operations), and specific readiness indicators and trends. GPRA metrics describing unit readiness trends by Service are reported separately in the *Quarterly Readiness Report to Congress.* The October-to-December QRRC serves as a combined GPRA plan and report for these classified measures.

**Training and Readiness Metrics**



| CORPORATE GOAL 1 |
| SHAPE AND RESPOND |

Performance Goal 1.2
Maintain Trained and Ready Forces

Army Force Levels | Navy Force Levels | Air Force Force Levels | Marine Corps Force Levels

Army Deployment Levels | Navy Personnel Tempo | Air Force Tempo | Marine Corps Deployment Tempo

Flying Hours | Steaming Days per Quarter | Tank Hours

Readiness Ratings (Classified)
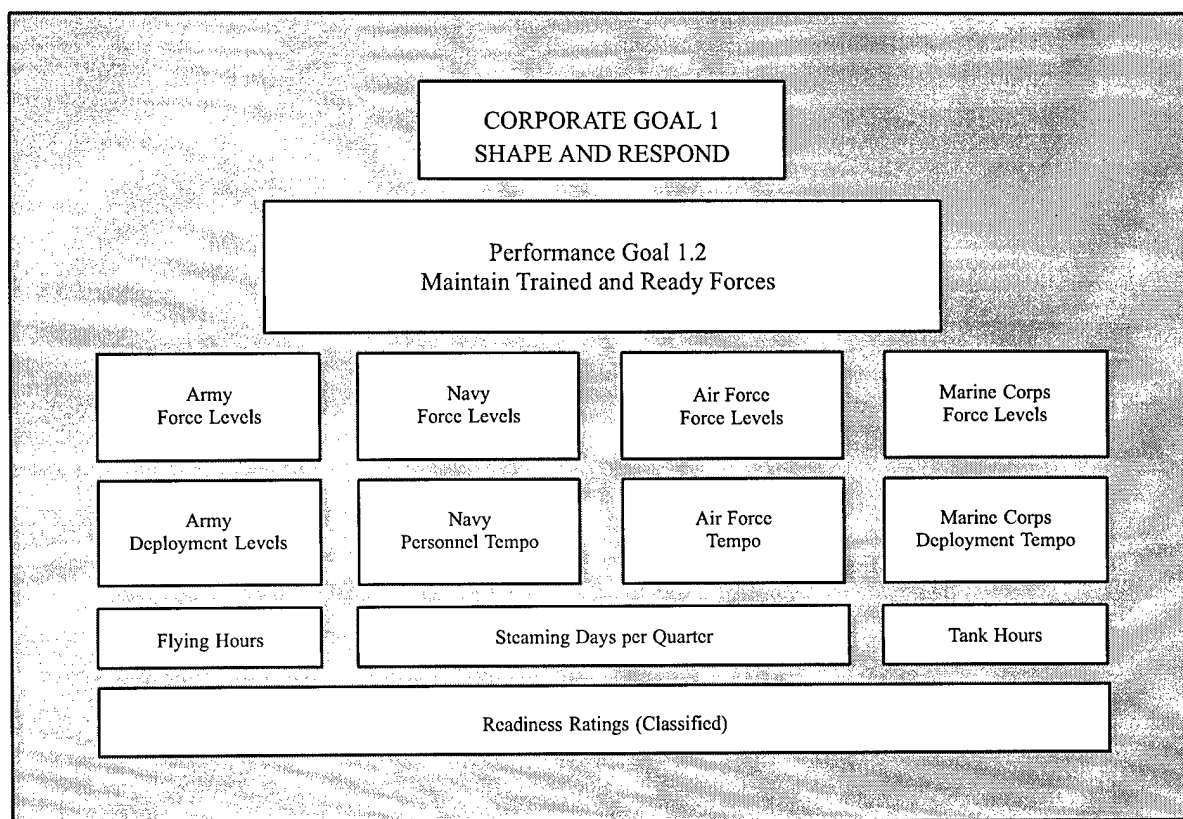
## Performance Measure 1.2.1 – Army Force Levels

|  | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| Active Corps | 4 | 4 | 4 | 4 | 4 | 4 |
| Divisions (Active/National Guard) | 10/8 | 10/8 | 10/8 | 10/8 | 10/8 | 10/8 |
| Active Armored Cavalry Regiments | 2 | 2 | 2 | 2 | 2 | 2 |
| Enhanced Brigades (National Guard) | 15 | 15 | 15 | 15 | 15 | 15 |

## Performance Measure 1.2.2 – Naval Force Levels

|  | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| Aircraft Carriers (Active/Reserve) | 11/1 | 11/1 | 11/1 | 11/1 | 11/1 | 12 |
| Air Wings (Active/Reserve) | 10/1 | 10/1 | 10/1 | 10/1 | 10/1 | 10/1 |
| Amphibious Ready Groups | 12 | 12 | 12 | 12 | 12 | 12 |
| Attack Submarines | 73 | 65 | 57 | 57 | 56 | 55 |
| Surface Combatants (Active/Reserve) | 115/10 | 116/10 | 106/10 | 106/10 | 108/8 | 108/8 |

| Performance Measure 1.2.3 – Air Force Force Levels | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| Fighter Wings (Active/Reserve) | 13/7 | 13/7.2 | 12.6/7.6 | 12.6/7.6 | 12.6/7.6 | 12.6/7.6 |
| Air Defense Squadrons (Reserve) | 10 | 6 | 4 | 4 | 4 | 4 |
| Bombers (Active/Reserve) | 175/25 | 158/27 | 158/27 | 163/27 | 163/27 | 163/27 |

| Performance Measure 1.2.4 – Marine Corps Force Levels | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| Marine Expeditionary Forces | 3 | 3 | 3 | 3 | 3 | 3 |
| Divisions (Active/Reserve) | 3/1 | 3/1 | 3/1 | 3/1 | 3/1 | 3/1 |
| Air Wings (Active/Reserve) | 3/1 | 3/1 | 3/1 | 3/1 | 3/1 | 3/1 |
| Force Service Support Groups (Active/Reserve) | 3/1 | 3/1 | 3/1 | 3/1 | 3/1 | 3/1 |

**Metric Descriptions.** The QDR established a requirement for four active Army corps, 10 active divisions (including six heavy and four light divisions), and two active armored cavalry regiments. The Total Army Analyses for FY 2003 and FY 2005 identified adjustments to the support needed to sustain Army combat forces across the range of military operations. As a result, the Army is implementing plans to convert lower-priority support and combat units to higher-priority support units. Pending the completion of Total Army Analysis FY 2007, the Army will continue to work with its reserve component to refine options for reconfiguring appropriate reserve units so that they mirror active units and are more relevant to national needs.

Consistent with the QDR, the Navy maintains 12 aircraft carrier battle groups and 12 amphibious ready groups. The number of carrier air wings stands at 10 active and one reserve. Surface combatant ships have decreased from the 1997 level of 125 to 116 as newer and more capable systems have entered service. Reflecting changes in requirements, the attack submarine force is slated to decline from 57 boats in FY 1999 to 55 by FY 2001.

The Air Force plans for a standing force of just over 12 active FWEs, eight reserve FWEs, four air defense squadrons (0.8 FWEs), and 190 bombers (142 of which are assigned to operational units).

**V&V Methodology.** The Services submit data on the stationing of their forces three times a year, in conjunction with updates of the Future Years Defense Program. In addition, unit deployments are reviewed at least twice yearly by the regional CINCs as part of their input to the PPBS process.

**Actual and Projected Performance.** The Department met its FY 1999 performance targets for military force structure. No significant changes to force structure goals are projected for FY 2000. The FY 2001 budget supports a force of 12 fully deployable aircraft carriers. One of these ships, the J.F. Kennedy, has been serving as a reserve/training asset and conducting some active deployments. Starting in FY 2001, the J.F. Kennedy will be redesignated as an active carrier, allowing it to be fully integrated into the deployment cycle.

**Performance Indicator 1.2.5 – Army Deployment Tempo**

| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| Number of Units With Soldiers Who Deploy More Than 120 Days per Year | N/A[a] | 18 | 0 | 43 | 0 | 0 |
| Number of Individual Units Deploying More Than 179 Days per Year | N/A[a] | 6 | 0 | 48 | 0 | 0 |
| [a] The Army tempo indicator took effect in 1998. | | | | | | |

**Performance Indicator 1.2.6 – Navy Personnel Tempo**

| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| Units Not Meeting Personnel Tempo Goal | 2 | 2 | 0 | 2 | 0 | 0 |

**Performance Indicator 1.2.7 – Air Force Tempo**

| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| Percentage of Personnel Assigned to Combat Systems Who Are Deployed Under 120 Days TDY per Year[a] | 87 | 77 | 100 | 75 | 100 | 100 |
| Average Number of Days Deployed for Those Personnel Exceeding 120 Days TDY per Year | 145 | 142 | N/A | 148 | N/A | N/A |
| [a] TDY = temporary duty. TDY is a measure of the time that a service member is deployed away from his or her home station. It includes personnel in occupational specialties directly associated with the operation of aircraft, weaponry, or other systems required for deployments. | | | | | | |

**Performance Indicator 1.2.8 – Marine Corps Deployment Tempo**

| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| Units Deploying More Than 180 Days per Year Over a 36-Month Scheduling Period | N/A[a] | 1 | 0 | 0 | 0 | 0 |
| [a] The Marine Corps tempo indicator took effect in 1998. | | | | | | |

**Metric Description.** The mechanisms used to ensure force readiness vary across the Services. The specific approaches adopted are a function of multiple factors, including Service-unique force characteristics, wartime and contingency response requirements, peacetime presence levels, the availability of training infrastructure, perishable skills, and the need for flexibility. Less tangible factors—such as morale, leadership development, and team building—also are considerations. The Army strives to attain the highest possible state of readiness in its first-to-fight units, while maintaining the ability to deploy later-arriving units within prescribed timelines. The Navy and Marine Corps maintain a cyclical readiness posture, tied to the deployment schedules of

their forces. When in home port, Navy and Marine units are engaged in training, maintenance, and resupply activities in preparation for their next rotational deployment. The Air Force maintains a high state of overall readiness, reflecting the rapid-response requirements of air assets in both crises and war.

Each Service has established a threshold for indicating when the pace of operations may begin to impair operational readiness, quality of life, or retention. For the Army, this statistic is the number of units deploying more than 179 days per year or the number of units containing soldiers who individually deploy more than 120 days. The Air Force uses as an indicator the percentage of personnel assigned to combat systems who are deployed more than 120 days a year. The Navy employs a combination metric for personnel tempo. To meet the Navy goal, a unit must deploy for no more than six months at a time, spend twice as much time nondeployed as deployed, and spend 50 percent of its time in home port over a five-year cycle. The Marine Corps metric is similar but sets the reporting threshold at the number of units deploying more than 180 days per year over a 36-month scheduling period.

**V&V Methodology.** Army deployment data, drawn from Unit Status Reports, are incorporated in the Status of Resources and Training System (SORTS) database, which is maintained by the Joint Staff. Unit tempo rates are calculated using a mathematical formula defined in Army Regulation 220-1, *Unit Status Reporting*, which takes the tempo for the reported month and projects it one month ahead of the reporting date. After tempo data are input into SORTS, these statistics can be accessed and reviewed at all levels, from individual units up to and including the Chairman of the Joint Chiefs of Staff.

Navy data are collected quarterly at the unit level. The data are relayed from unit commanders to fleet headquarters, which pass the messages on to Navy headquarters. The data are reviewed for accuracy at each level in the reporting chain. Navy Instruction 300.13A, *Navy Personnel Tempo for Operations*, defines standards for the assessment and evaluation of tempo data. Marine Corps data are maintained in an automated database at Marine Corps headquarters. Operating units report deployment activity on a semi-monthly basis; the data are recorded quarterly in the Marine Corps Training, Employment, and Exercise Plan.

The Air Force records temporary duty and duty-status changes in its automated Personnel Data System (PDS); these data are continuously updated. A January 1998 assessment by the Air Force Studies and Analysis Agency found historical PDS data to be 94 percent accurate; the TDY history file matched by 90 percent the tempo reported by operational units.

**Actual and Projected Performance.** The Department exceeded its deployment ceilings for Army units in FY 1999, due mainly to contingency operations in support of Operation Allied Force. As a result of follow-on activities and training, the Army will likely surpass deployment thresholds again in FY 2000. Operation Allied Force resulted in two Navy units failing to meet tempo goals in FY 1999. The Marine Corps met its FY 1999 goal, despite the increased pace of operations. Within the Air Force, 25 percent of personnel assigned to combat systems were deployed over 120 days in FY 1999; the transition to the Aerospace Expeditionary Force concept will allow the Air Force to temper the impact of contingency operations on its forces in FY 2000.

As it reconstitutes forces following Operation Allied Force, the Department will strive to meet its FY 2000 tempo goals.

| Performance Indicator 1.2.9 through 1.2.12 – Army, Navy, Air Force, and Marine Corps Classified Readiness Indicators |
| --- |
| Results for these metrics can be found in the October-to-December 1999 *Quarterly Readiness Report to Congress.* The metrics track readiness, by Service, in the areas of personnel, equipment, training, and combat enablers. The annual statistics provide an overall picture of the readiness of military units to accomplish the specific missions assigned to them. |

## Performance Measure 1.2.13 – Flying Hours

| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| **Army** | | | | | | |
| Active | 14.1 | 14.0 | 14.1 | 14.5 | 14.5 | 14.5 |
| Reserve | 7.2 | 7.3 | 8.3 | 8.3 | 9.5 | 9.0 |
| National Guard | 7.1 | 5.4 | 7.3 | 6.3 | 9.0 | 9.0 |
| **Navy and Marine Corps** | | | | | | |
| Active | 27 | 20.2 | 22.1 | 23 | 22.3 | 22.3 |
| Reserve | N/A | 11.0[a] | 11.0[a] | 11.0[a] | 11.0 | 11.0 |
| **Air Force** | | | | | | |
| Fighter/Attack | | | | | | |
| Active | N/A | 17.0 | 17.7 | 17.7 | 17.2 | 17.2 |
| Reserve | N/A | 10.8 | 10.7 | 10.7 | 11.1 | 11.1 |
| National Guard | N/A | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 |
| Bombers | | | | | | |
| Active | N/A | 19.3 | 17.9 | 17.9 | 15.8 | 15.8 |
| Reserve | N/A | 16.5 | 16.0 | 17.6 | 17.2 | 17.2 |
| National Guard | N/A | 19.7 | 19.7 | 19.7 | 19.7 | 19.7 |

NOTE: Data reflect monthly flying hours per aircrew, except for FY 1997-1999 figures for the active Army, which represent aircraft flying hours per month.

[a] Naval Reserve only.

**Metric Description.** This metric reflects the flying hours per month required by each Service to maintain pilot and crew proficiency (including training and maintenance activities) in the active and reserve components.

**V&V Methodology.** Army flying-hour data are collected monthly in electronic format by each Army major command; the data are reviewed quarterly at Department of Army headquarters. In addition, independent reviews of flying-hour data are periodically conducted by the U.S. Army Aviation Safety Center and the U.S. Army Cost and Economic Analysis Center.

Navy and Marine Corps data are recorded at the unit level in flight logs. The unit data are reported through the chain of command each month and are used to determine aircraft maintenance schedules. The Navy verifies these data through an independent internal review process (similar to the Army's), under which the Navy Office for Flying Hours and Aviation Safety, within the Air Warfare Directorate (N-88), verifies and validates Certified Execution Reports provided by field elements.

The Air Force uses an automated database, the Reliability and Maintenance Information System (REMIS), to compare the flying-hours flown by operational units over the course of a fiscal year with projections derived from flying-hour models at the start of the year. Flying-hour data are extracted monthly from REMIS and distributed to Air Force major commands, via the Internet, for review and validation. The Department of the Air Force headquarters staff reviews flying-hour data twice annually.

Flying-hour data for each Service are assessed during the Department's annual program and budget reviews. Details on unit readiness ratings, which are classified, are provided to Congress in the QRRC.

**Actual and Projected Performance.** The Department met most of its FY 1999 flying-hour targets; the exception was the Army National Guard, which improved upon its 1998 performance but still fell about 15 percent below target levels. No shortfalls are projected for FY 2000.

**Performance Measure 1.2.14 – Number of Tank Miles per Year**

| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| Army (Active) | 575[a] | 676[a] | 800 | 681[a] | 800 | 800 |
| Army National Guard (Enhanced Separate Brigades) | 211 | 207 | 288 | 160 | 310[b] | 248[c] |

[a] Includes annual mileage for the National Training Center.

[b] Includes annual mileage for individual tank crew and squad training, platoon-level training, Combat Training Center programs, and transit to and from training areas.

[c] Reflects a programmed decrease in transit miles to and from training areas.

**Metric Description.** Tank miles represent the average level of peacetime activity—including in-field training, combat simulations, and equipment maintenance—needed to achieve wartime proficiency standards, as defined by Army doctrine.

**V&V Methodology.** Army tank-mile data are compiled quarterly from field unit reports. The data are transmitted electronically to the U.S. Army Logistics Support Activity and the U.S. Army Cost and Economic Analysis Center, which review them for accuracy and integrity and then forward them to Department of Army headquarters for management review.

**Actual and Projected Performance.** Due to the diversion of resources to support other Army O&M programs, the Department did not fully meet its FY 1999 performance goals for tank miles. No shortfalls are projected for FY 2000, pending receipt of supplemental funding.

**Performance Measure 1.2.15 – Number of Steaming Days per Quarter**

| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| Navy (Active Deployed) | N/A | 50.5 | 50.5 | 50 | 50.5 | 50.5 |
| Navy (Reserve Deployed) | N/A | 50.5 | 50.5 | 50.5 | 50.5 | 50.5 |
| Navy (Active Nondeployed) | N/A | 26.8 | 28 | 28 | 28.0 | 28.0 |
| Navy (Reserve Nondeployed) | N/A | 18.0 | 18 | 18 | 18.0 | 18.0 |

**Metric Description.** This metric tracks the total number of steaming days (days at sea) per quarter for active and reserve component naval vessels.

**V&V Methodology.** Steaming days are planned and budgeted as fuel costs for ships. Actual steaming days are derived from fuel budget execution.

**Actual and Projected Performance.** The Navy effectively met its steaming-day goal for FY 1999 (the shortfall was less than 1 percent). No shortfalls are projected for FY 2000.

## PERFORMANCE GOAL 1.3: STRATEGIC MOBILITY

Projection forces—airlift, sealift, and equipment prepositioning—ensure that the nation has the ability to respond, with appropriate numbers and types of forces, to crises worldwide. As in its assessment of combat force levels and readiness, the QDR recognized that mobility forces must be able to respond across the spectrum of operations, from peacetime engagements to major theater wars. Further, the QDR reaffirmed the baseline requirements for an intertheater airlift capability of approximately 50 million ton-miles per day (MTM/D) and a surge sealift capacity of 10 million square feet of cargo space. (Surge sealift refers to seaborne transport

capacity that can be brought to bear at the outset of a crisis. It does not include ships routinely used for prepositioning purposes, covered under Performance Measure 1.3.3.) Programmed aircraft and ship acquisitions will enable the Department to reach its goals for airlift and sealift in FY 2004 and FY 2002, respectively. The Department plans to purchase additional C-17s in the coming years to ensure that U.S. mobility forces possess the flexibility to respond to the full range of crises.

The prepositioning of military equipment and supplies near potential conflict regions reduces response time in contingencies. With materiel stored on land or afloat at overseas locations, only troops and a relatively small amount of equipment need to be airlifted to a theater early in a crisis. Objectives for prepositioning are based on those forces required very early in a conflict to halt an enemy's advance.

### Evaluation of FY 1999 Performance

The Department met its FY 1999 goals for sealift and airlift, but the continued use of prepositioning sets to support contingency operations has caused stockage levels to fall below the objectives for some items. Overall, strategic mobility assets support the Department's ability to prosecute two nearly simultaneous major theater wars.

The major airlift and sealift acquisition programs—the C-17 transport aircraft and the new fleet of large medium-speed roll-on/roll-off (LMSR) ships—are both approximately half complete. These programs add significantly to the Department's capability and flexibility to respond to contingencies. Missions undertaken in support of Operation Allied Force demonstrated the C-17's ability to carry outsize loads and to land on short, austere airfields. Two LMSRs moved U.S. Army combat equipment from Germany to Greece in support of

the Balkans deployment. It would have taken four to six older ships half-again as long to make this same delivery.

The airlift metric (1.3.1) tracks the growth of airlift capacity over time but does not capture short-term degradations in operational capability. Currently, the high tempo of contingency operations and maintenance problems with the C-5 are causing mission-capable rates to drop below the planning factors used to compute Performance Measure 1.3.1.

Air Force bare-base sets (equipment for establishing operations at unimproved airfields) are less ready to support combat operations than the rest of the prepositioned equipment addressed in Performance Measure 1.3.3. The continued use of these sets for contingencies and exercises has exceeded the resources allocated to reconstitute them. Thus, the Department requested, and Congress approved, $72 million in FY 1999 to restore the Air Force sets over the next few years. Since the bare-base sets are required early in a conflict, both their current condition and each future decision to use them for small-scale contingencies poses risks for executing a major theater war.

The three brigade sets of Army material prepositioned in Europe were not filled or maintained to the same standards in FY 1999 as Army material prepositioned in Southwest Asia, Korea, or afloat. However, because the European sets are not critical to the early phases of a major war, their lower level of fill and maintenance does not increase risk appreciably.

### Supporting Metrics: FY 1999 Performance Report and FY 2001 Performance Plan

Key metrics for strategic mobility are airlift capacity, sealift capacity, and equipment prepositioning.

**Strategic Mobility Metrics**

CORPORATE GOAL 1
SHAPE AND RESPOND

Performance Goal 1.3
Strategic Mobility

Airlift Capacity    Sealift Capacity    Prepositioned Stocks
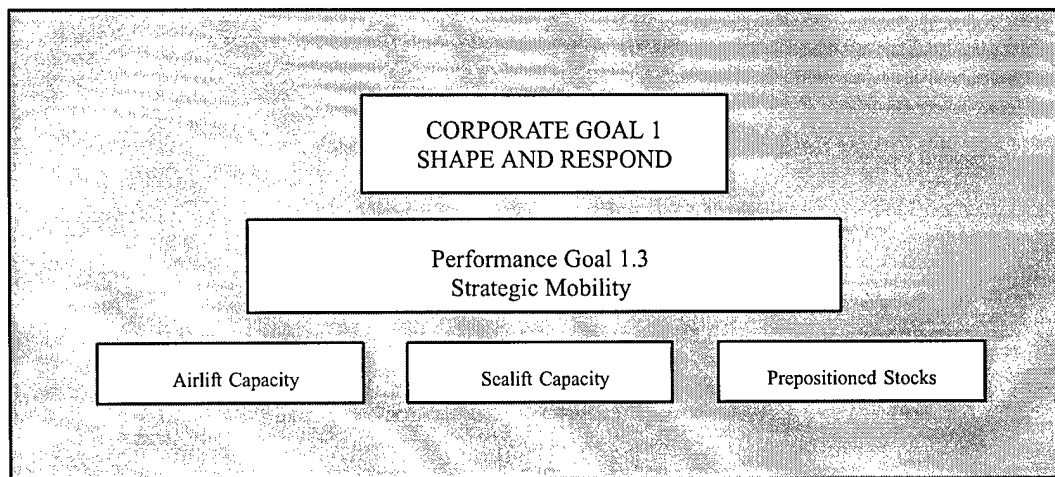
| Performance Measure 1.3.1 – Airlift Capacity (Million-Ton-Miles Per Day) | | | | | | |
|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001/2004 Goal |
| MTM/D (military) | 26 | 27 | 26 | 26 | 26 | 26/29 |
| MTM/D (military and CRAF) | 46 | 47 | 46 | 46 | 46 | 46/50 |
| NOTE: CRAF = Civil Reserve Air Fleet | | | | | | |

**Metric Description.** The FY 2004 goal of 50 MTM/D represents the minimum combined civil and military airlift capability that U.S. forces would need to fight and win two major theater wars at an acceptable level of risk. This goal was established by the *1995 Mobility Requirements Study Bottom-Up Review Update.* Military airlift is required for carrying outsize loads (such as Patriot missile systems, tanks, and helicopters) and for unloading cargo rapidly, particularly at airfields lacking materiel-handling equipment. MTM/D is an aggregate measure of airlift capacity used as a top-line comparative metric. It combines measures such as aircraft flight hours per day, speed, and payload. Typical or average values are selected for each of these measures for each aircraft type in order to compute MTM/D. These average values, called planning factors, are used in developing military operation plans. Thus, changes in MTM/D values reflect changes in the number and type of airlift aircraft.

**V&V Methodology.** The status of primary authorized aircraft (PAA)—that is, the immediate availability of various types of transport aircraft—is recorded and tracked in the Programming Data System, maintained by the Air Force Office of Plans and Programs. Other data used to calculate airlift capacity include aircraft block speeds, average payloads, utilization rates, and productivity factors. PAA data are updated three times annually. Air Force Pamphlet 10-1403, *Air Mobility Planning Factors*, defines broad planning factors for peacetime and wartime airlift operations. The factors are intended to help Service, joint, and combined planners make gross estimates about mobility requirements in the early stages of the planning process. They cover intertheater airlift, aerial refueling, and aeromedical evacuation. Airlift data are verified in periodic reviews, conducted by the Air Mobility Command, of the MTM/D capabilities of the CRAF. The Air Force uses capacity models to determine PAA levels, crew ratios, and associated factors for each budget year, based on long-term programming requirements established in the QDR.

**Actual and Projected Performance.** The Air Force met its FY 1999 performance targets for airlift capacity. No MTM/D shortfalls are projected for FY 2000. As noted earlier, the continued high tempo of contingency operations, combined with C-5 maintenance problems, has caused mission-capable rates to drop below the planning factors used in computing this metric. Thus, in the near term, somewhat less airlift capacity is available for routine operations than indicated by the metric.

**Performance Measure 1.3.2 – Surge Sealift (Million Square Feet)**

|  | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| Organic Surge Sealift | 7.3 | 7.3 | 7.7 | 7.7 | 8.7 | 9.2 |
| NOTE: Reflects capacity contributed by DoD-owned or chartered vessels. Excludes additional capacity provided by commercial ships that could be made available for military use in a major deployment. | | | | | | |

**Metric Description.** Square footage serves as an aggregate measure of ship capacity. It is computed from ship deck plans by the Maritime Administration (MARAD) or the Military Sealift Command (MSC) and is tracked as a planning consideration by the United States Transportation Command (USTRANSCOM). Square footage is the preferred capacity measure for roll-on/roll-off ships. For containerships and breakbulk ships, the standard measures (number of containers or volumetric capacity) are converted to square footage, based on each vessel's ability to carry equivalent military cargo.

**V&V Methodology.** The Department's primary source for ship capacity performance data is actual vessel deck plans tabulated in several different databases. Ship capacity data are collected and consolidated by MARAD and the MSC and sent to USTRANSCOM for review. The data are updated at working levels on a daily or weekly basis.

Data on ships entering the Ready Reserve Force (RRF) and on vessels under construction or conversion are collected on an as-needed basis. The Department of the Navy reviews these data quarterly for accuracy; the Office of the Secretary of Defense and the Joint Staff conduct detailed reviews at each step in the budget cycle. Program viability is tested annually through the unannounced, no-notice activation of two or more RRF ships to prove operability and to assess the vessels' ability to meet activation schedules.

**Actual and Projected Performance.** The Department met its performance goals for organic surge sealift in FY 1999 and expects to meet its targets for FY 2000. However, projections point to an expected shortfall of 400,000 square feet by the end of FY 2001, relative to the original long-term goal of 10 million square feet. The shortfall will result primarily from a delay, from FY 2001 to FY 2002, in delivery of the nineteenth LMSR. Surge sealift capacity will, therefore, fall short of the 10-million-square-foot target in FY 2001; the goal will be reached a year or two later, in FY 2002 or 2003.

The Congress added funds to the FY 2000 budget to procure a twentieth LMSR. This ship will be used to free an older, smaller vessel for employment with the Maritime Prepositioning Force, with a net increase in surge capacity. Because the construction of the new ship and the conversion and transfer of the other vessel have yet to be scheduled, these force structure adjustments are not reflected in the FY 2001 goal.

| Performance Measure 1.3.3 – Forces Supported by Land- and Sea-Based Prepositioning | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| Army Heavy Brigades | | | | | | |
|   Land-based | 5 | 5 | 5 | 5 | 6 | 6 |
|   Afloat | 1 | 1 | 1 | 1 | 1 | 2 |
| Marine Expeditionary Forces (MEFs) | | | | | | |
|   Land-based | Partial[a] | Partial[a] | Partial[a] | Partial[a] | Partial[a] | Partial[a] |
|   Afloat | 3 | 3 | 3 | 3 | 3 | 3 |
| [a] Material is prepositioned only for the lead elements of a MEF. | | | | | | |

**Metric Description.** Land-based prepositioning programs are maintained in Europe, Southwest Asia, and the Pacific region. These programs are complemented by sea-based prepositioning, which provides the flexibility to move equipment within and between theaters of operation. Additional prepositioning programs, not covered by Performance Measure 1.3.3, provide base, fuel, and medical support.

**V&V Methodology.** Service-specific prepositioning data are updated with each revision of the FYDP database. Ship inventory data are updated monthly and can be viewed on the Military Sealift Command (MSC) web page. Global Status of Resources and Training System (GSORTS) data, maintained by the Joint Staff, are updated by the respective Services every three years for shipboard sets and monthly for sets stored ashore.

**Actual and Projected Performance.** DoD met its FY 1999 performance targets for prepositioning and expects to achieve its goal for FY 2000. However, because some prepositioned supplies were used during FY 1999 for contingency operations (mainly Air Force supplies not directly captured in this metric), the level of readiness for these sets, as reported in GSORTS, may decline.

# PERFORMANCE GOAL 2.1 – RECRUIT, RETAIN, AND DEVELOP PERSONNEL

No amount of technological sophistication will enable the U.S. military to respond to future challenges if it fails to maintain the quality of its personnel or to make the investments necessary to develop them to their full potential. The Department is committed to recruiting high-quality service members, providing robust training for them, and improving the quality of life of its military personnel and their families.

The measures for Performance Goal 2.1 address recruiting and retention. The recruiting metrics focus on enlisted personnel, where the Department's major challenges lie. Officer recruitment is monitored annually. The primary management challenge with respect to the officer corps is maintaining the proper mix of occupational specialties. For example, the Navy has recently had difficulty in recruiting naval flight officers (non-pilot officer aircrew personnel) and nuclear propulsion officers and in retaining aviation, surface, and nuclear specialists. Legislative initiatives to expand specialty pay have been developed to help remedy this situation. At the end of FY 1999, the Air Force had a shortfall of 1,267 pilots, concentrated primarily in the fighter and theater airlift specialties. Despite actions to increase the size of pilot training classes and other management initiatives, the shortage is projected to grow over the next several years. The Air Force has lengthened the time pilots are required to serve on active duty following flight training, yet long-term challenges remain.

## Evaluation of FY 1999 Performance

As noted above, the Department did not fully meet its military manpower goals for FY 1999. While retention rates and recruit quality remained steady or declined only slightly, the overall number of recruits fell short of objectives. The major factors inhibiting recruiting performance were the robust economy and continued record low unemployment. In the short term, the Department remains able to meet all operational requirements, but continued recruiting shortfalls could, over time, jeopardize the maintenance of QDR-mandated force levels and readiness standards.

The Department is acutely aware of the need to sustain QDR-directed levels of manning and therefore monitors annual gains and losses closely. For FY 2000, a number of tools and incentives have been implemented to assist in achieving recruiting targets.

Shortfalls in retention are of particular concern, since reenlistment shortages are the costliest in terms of the impact on long-term readiness and the overall well-being of the force. Shortfalls in first- and second-term reenlistments often result in occupational and skill-level mismatches within units, exacerbating problems caused by high overseas deployment rates. Thus, recent and significant changes in benefits and reenlistment incentives have been targeted at this group of service members. Still, current retention challenges are expected to continue, due to the combined effects of the 1990s force drawdown, an extended period of low domestic unemployment, changing employee attitudes and expecta-

tions, and increased uncertainty associated with world-wide force commitments.

In addition to the discussion presented below, Chapters 4 and 10 review issues related to force readiness and quality of life, including challenges facing the Department in reaching recruiting and retention goals.

### Supporting Metrics: FY 1999 Performance Report and FY 2001 Performance Plan

Four metrics support Performance Goal 2.1: enlisted recruiting, recruit quality benchmarks, active retention rates, and reserve attrition rates.

**Personnel Metrics**



CORPORATE GOAL 2
PREPARE

Performance Goal 2.1
Recruit, Retain, and Develop Personnel

Enlisted Recruiting | Recruit Quality Benchmarks | Active Retention/ Reserve Attrition
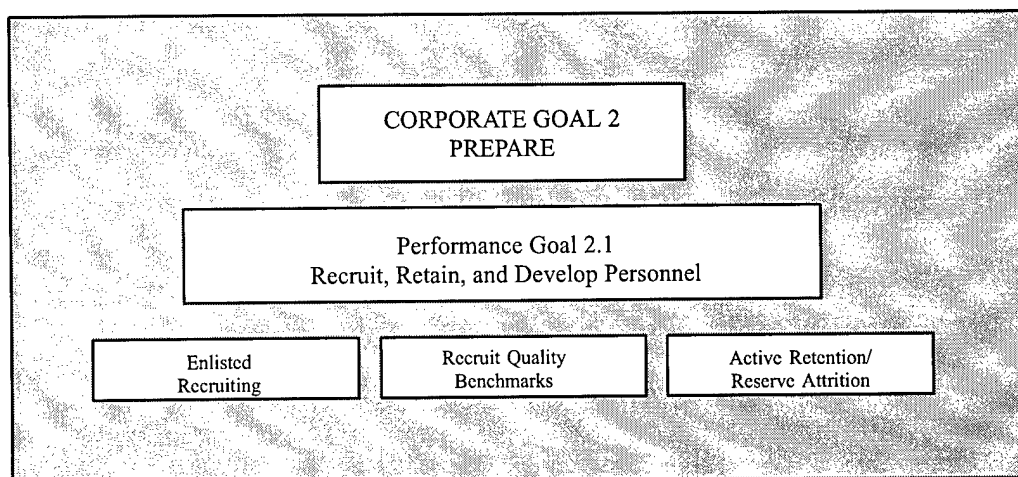
**Performance Measure 2.1.1 – Enlisted Recruiting**

|  | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| Active Force | 197,081 | 186,150 | 194,500 | 186,600 | 203,700 | 205,248 |
| Selected Reserve | 155,702 | 141,052 | 158,722 | 140,070 | 151,600 | 156,253 |

**Metric Description.** The Department-wide goals set for enlisted recruiting represent the projected number of new personnel needed each year to maintain statutorily-defined military end-strengths and the proper distribution by rank, allowing for discharges, promotions to higher rank, and anticipated retirements. As personnel trends change throughout the year, the monthly and yearly recruiting objectives must be adjusted. This process yields a revised DoD-wide annual goal against which recruiting is evaluated.

**V&V Methodology.** Each Service captures recruiting information at the time of enlistment in a dedicated computer system. Automated reports, produced monthly, are used to track progress in meeting recruiting targets and to set new monthly goals. Data flow and V&V strategies are summarized, by Service, in Table I-2.

| Data Flow for Enlisted Recruiting (Active Components) | | | | Table I-2 |
|---|---|---|---|---|
| | **Input** | **Cross-Check** | **Aggregate** | **V&V** |
| Army | REQUEST database | Against manually-assembled reports that the Army Recruiting Command provides to Army headquarters | HQDA Decision Support System | Automated data and manually-compiled reports are compared monthly by Army headquarters. |
| Navy | PRIDE database | Recruit Training Center databases Military Enlistment Processing Command Integrated Reporting System | PRIDE database | The Office of the Chief of Naval Personnel reviews monthly. (PRIDE is being improved following a recent evaluation of its performance by the accounting firm of Price Waterhouse Coopers.) |
| Air Force | PROMIS database | Air Force Recruiting Information System (AFRIS) | PROMIS database | The commander of the recruiting station reviews daily. Monthly data reviews and periodic audits by the Air Force Recruiting Command. |
| Marine Corps | ARMS database | The commanding officer of each recruiting district verifies data reported on a standard form. The forms are sent to Marine headquarters, where they are manually checked against ARMS data. | ARMS database | District and region personnel manually review monthly reports. Marine Corps Recruiting Command manually matches monthly reports to ARMS database. |

**Actual and Projected Performance.** Performance trends for enlisted recruiting are summarized in Table I-3.

| Enlisted Recruiting: FY 1999 Performance and Implications for FY 2000 | | Table I-3 |
|---|---|---|
| **Service Component** | **Performance in FY 1999** | **Implications for FY 2000** |
| Army Active Force | Fell short of goal by 6,291 | To help make up the shortfall in FY 2000, the Army is increasing the number of recruiters, expanding advertising budgets, and providing enhanced enlistment incentives. |
| Army Selected Reserve | Army Reserve: Fell short of goal by 10,300<br><br>Army National Guard: Exceeded goal by 132 | Same initiatives as for the active force |
| Navy Active Force | Exceeded goal by 100 | None anticipated |
| Navy Selected Reserve | Fell short of goal by 4,740 | The FY 2000 goal will be a challenge to meet. To help achieve the goal, the Naval Reserve is offering incentive programs and is taking steps to curb attrition. |
| Marine Corps Active Force | Met goal | None anticipated |
| Marine Corps Selected Reserve | Exceeded goal by 101 | None anticipated |
| Air Force Active Force | Fell short of goal by 1,732 | The pool of newly enlisted personnel awaiting induction under the Delayed Entry Program is below optimum levels for the start of FY 2000. This is an indication of how hard recruiting will be in FY 2000. To help achieve the FY 2000 numeric goal, the Air Force is increasing recruiter manning, sponsoring TV ads, offering enhanced enlistment bonuses, and expanding the Prior Service Program. |
| Air Force Selected Reserve | Air Force Reserve: Fell short of goal by 3,723<br><br>Air National Guard: Fell short of goal by 122 | FY 2000 recruiting requirements are being expanded to offset the FY 1999 shortfall, making end-strength achievement even more challenging. |

| Performance Indicator 2.1.2 – Quality Benchmarks for Enlisted Recruits (In percents) | | | | | | |
|---|---|---|---|---|---|---|
| | **FY 1997 Actual (Active/ Reserve)** | **FY 1998 Actual (Active/ Reserve)** | **FY 1999** | | **FY 2000 Goal[a]** | **FY 2001 Goal[a]** |
| | | | **Goal[a]** | **Actual (Active/ Reserve)** | | |
| Recruits Holding High School Diplomas | 94/90 | 94/89 | >90 | 93/90 | >90 | >90 |
| Recruits in AFQT Categories I-IIIA | 69/66 | 68/64 | >60 | 66/68 | >60 | >60 |
| Recruits in AFQT Category IV | 0.9/2 | 0.9/2 | <4 | 0.9/1.0 | <4 | <4 |
| NOTE: AFQT = Armed Forces Qualification Test. The AFQT is a subset of the standard aptitude test administered to all applicants for enlistment. It measures math and verbal aptitude and has proven to correlate closely with trainability and on-the-job performance. | | | | | | |
| [a] Goals are the same for both the active and reserve component. | | | | | | |

**Metric Description.** The quality benchmarks for recruiting were established in 1992, based on a study conducted jointly by DoD and the National Academy of Sciences. The results produced a model linking recruit quality and recruiting resources to the job performance of enlistees. The model illuminates the relationships among costs associated with recruiting, training, attrition, and retention. It uses as a standard the performance levels demonstrated by junior servicemen and women who served in the Gulf War. The Department has adopted recruiting targets derived from this model—90 percent high school diploma graduates and 60 percent top-half aptitude personnel (AFQT categories I-IIIA)—

as its minimum acceptable quality thresholds. Adhering to these benchmarks will reduce personnel and training costs, while ensuring that the force meets high performance standards.

**V&V Methodology.** Data collected as part of the enlistment process are routed, reviewed, and managed using the same mechanisms employed for Performance Measure 2.1.1.

**Actual and Projected Performance.** The Department exceeded its goal for recruit quality in FY 1999 and expects to meet or exceed the FY 2000 target.

| Performance Measure 2.1.3A – Active Component Enlisted Retention Rates | | | | | |
|---|---|---|---|---|---|
| | FY 1997 | FY 1998 | FY 1999 Goal/Actual | FY 2000 Goal | FY 2001 Goal |
| **Number of Personnel** | | | | | |
| **Army**[a] | | | | | |
| First Term | 24,312 | 21,672 | 20,200 | 20,843 | 20,000 | 20,000[b] |
| Second Term | 30,209 | 22,912 | 23,000 | 24,174 | 24,700 | 24,700[b] |
| **Percentage of Eligible Population** | | | | | |
| **Navy** | | | | | |
| First Term | 30.8 | 30.5 | 32 | 28.2 | 30.5 | 33 |
| Second Term | 48.4 | 46.3 | 48 | 43.8 | 45 | 48 |
| **Air Force** | | | | | |
| First Term | 56 | 54 | 55 | 49 | 55 | 55 |
| Second Term | 71 | 69 | 75 | 69 | 75 | 75 |
| **Marine Corps** | | | | | |
| First Term | 19.2 | 21.6 | 23 | 23.8 | 26 | 23[b] |
| Second Term | 56.6 | 57.7 | N/A[c] | 56.5 | N/A[c] | N/A[c] |
| a The Army has historically managed retention by setting a firm numeric goal for the number of personnel expected to reenlist; the other Services express retention goals as a percentage of the eligible population. | | | | | |
| b Preliminary; final goal will be established during the fourth quarter of FY 2000. | | | | | |
| c The Marine Corps, while monitoring trends, does not set management goals for second-term retention. | | | | | |

**Metric Description.** The post-Cold War drawdown of U.S. military forces affected retention goals for nearly a decade. The Services gave some members early retirement and released others from active duty to achieve force reduction targets. Since retention rates are based on required staffing in each paygrade, retention goals were relaxed while the military was decreasing in size.

The drawdown is now effectively over, and personnel levels are stabilizing.

**V&V Methodology.** The V&V methodology used for Performance Measure 2.1.3A is summarized in Table I-4.

| Data Flow for Active Retention | | | Table I-4 |
|---|---|---|---|
| **Service** | **Input System** | **Aggregate System** | **V&V** |
| Army | Reenlistment, Reclassification, and Assignment System (RETAIN)<br><br>Standard Installation/Division Personnel System (SIDPERS) | Active Army Military Management Program (AAMMP) | Personnel commands report data weekly to Deputy Chief of Staff for Personnel (DCSPER).<br><br>Major commands process data via the RETAIN system and report it to DCSPER quarterly.<br><br>RETAIN data and SIDPERS updates are used to verify AAMMP assumptions and develop changes in policy if necessary. |
| Navy | Navy Enlisted System (NES) Officer Personnel Information System (OPINS) | NES/OPINS | Data for enlisted personnel are reported monthly.<br><br>Data for officer personnel are gathered quarterly. Functional managers, analysts, and policy-makers review the data to verify accuracy and monitor trends. |
| Air Force | Personnel Data System maintained by Headquarters, Air Force Personnel Command (HQ AFPC/DPS) | Personnel Data System<br><br>(HQ AFPC/DPS) | Air Force staff reviews retention programming code and data aggregation methods annually. |
| Marine Corps | Total Force Retention System (TFRS)—used by commanders to request permission to reenlist individual Marines.<br><br>Marine Corps Total Force System (MCTFS)—transmits headquarters' decisions on TFRS requests to the respective commands and, for those requests that are approved, relays reenlistment data back to headquarters. | MCTFS | TFRS cross-checks MCTFS.<br><br>Written guidance for TFRS is provided to field units.<br><br>Use of data elements in MCTFS is standardized throughout the Marine Corps. |

**Actual and Projected Performance.** Performance trends for enlisted recruiting are shown in Table I-5.

| Enlisted Retention: FY 1999 Performance and Implications for FY 2000 | | Table I-5 |
|---|---|---|
| Service Component | Performance in FY 1999 | Implications for FY 2000 |
| Army | Slightly exceeded goal (when third-term retention is factored in). This helped mitigate the FY 1999 recruiting shortfall. | Retention is becoming a concern in some specialty career fields, such as linguists and computer system operators. Shortages are also projected in key leadership positions, including captains and noncommissioned officers. |
| Navy | Showed a positive trend, but goals were not met. At-sea manning gaps dropped from a high of 22,000 to less than 12,000. | To improve retention, the Navy will reduce the interdeployment training cycle workload and enhance at-sea manning. |
| Marine Corps | Met goal | None anticipated |
| Air Force | Fell 4.5 percent short of goal | The Air Force has implemented DoD initiatives to increase retention for FY 2000. These initiatives include a 4.8 percent pay raise, pay table reform, retirement reform, continued reenlistment bonuses, and annual bonuses for key enlisted skills. To mitigate the FY 1999 shortfall, the Air Force will prioritize manpower needs, ensuring critical billets are filled and operational billets receive priority over staff billets. |

| Performance Measure 2.1.3B – Selected Reserve Enlisted Attrition Rates (in percents) | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Actual | FY 1999 Goal | FY 2000 Goal (Ceiling) | FY 2001 Goal (Ceiling) |
| Army National Guard | 18.5 | 18.3 | 18.5 | Establish Attrition Goals for FY 2000 | 18.0 | 18.0 |
| Army Reserve | 35.4 | 32.6 | 27.2 | | 28.6 | 28.6 |
| Naval Reserve | 31.3 | 26.3 | 29.8 | | 36.0 | 36.0 |
| Marine Corps Reserve | 28.4 | 29.6 | 30.5 | | 30.0 | 30.0 |
| Air National Guard | 10.4 | 11.1 | 11.7 | | 12.0 | 12.0 |
| Air Force Reserve | 19.7 | 13.6 | 14.2 | | 18.0 | 18.0 |

**Metric Description.** In assessing retention trends in the reserve components, DoD employs attrition rates rather than reenlistment rates. Attrition is computed by dividing total losses for a fiscal year by average personnel strength for that year. This metric is preferable to reenlistment rates because only a small portion of the reserve population is eligible for reenlistment during any given year. In addition to monitoring attrition, the Department has decided to create attrition ceilings in order to enhance reserve personnel management. The Department's FY 1999 objective was to set formal performance goals for attrition, starting with FY 2000. Attrition goals represent the maximum number of losses deemed acceptable in a given fiscal year—that is, they establish a ceiling for personnel departures.

**V&V Methodology.** Monthly updates of individual reserve component personnel databases feed the Reserve Component Common Personnel Data System (RCCPDS), maintained by the Defense Manpower Data Center (DMDC). DMDC is tasked with monitoring data quality. Quarterly workshops, sponsored by the Office of the Assistant Secretary of Defense for Reserve Affairs, provide a forum for reviewing the data and recommending ways to improve attrition.

**Actual and Projected Performance.** The Department established attrition ceilings for FY 2000. It is anticipated that each reserve component will finish FY 2000 near or below its attrition ceiling.

## PERFORMANCE GOAL 2.2 – TRANSFORM U.S. MILITARY FORCES FOR THE FUTURE

Fielding modern and capable forces in the near to mid-term requires aggressive action today. Sustained, adequate spending on the modernization of U.S. forces is essential to ensure that tomorrow's forces continue to dominate across the spectrum of military operations. The procurement objectives established by the Department strike a balance between the need to devote continued resources to the operation and maintenance of existing forces and the need to sustain a high level of performance through the replacement of aging equipment.

To ensure U.S. military preeminence in the long term, the Department must continue to focus investments on new generations of defense technologies. The Defense Science and Technology Strategy, with its supporting Basic Research Plan, Joint Warfighting Science and Technology Plan, and Defense Technology Area Plan, is the foundation of the science and technology (S&T) program. The Office of the Secretary of Defense, the Joint Staff, the military departments, and the defense agencies collaboratively develop the S&T program.

The Department's commitment to transforming U.S. military forces requires robust and stable funding for the S&T program. S&T expenditures support basic research as well as focused investments guided by defense technology objectives (DTOs). DTOs provide a framework for S&T efforts by identifying:

- What specific technologies will be developed and/or demonstrated.

- What specific milestones are to be reached, using what approaches.

- Which customers will benefit.

- What specific benefits the customers will gain.

- What level of funding will be programmed and from what sources.

- What quantitative metrics will indicate progress.

Joint experimentation is critical to gaining insights into new operational concepts and validating the ability of these concepts to meet future battlefield requirements. The Department is committed to an aggressive program of joint experimentation that integrates Service efforts and fosters innovation and the rapid fielding of new joint concepts and capabilities. With the June 1998 designation of the United States Joint Forces Command (USJFCOM) as DoD's executive agent for joint experimentation, the Department has taken a major step toward realizing the integrated military capabilities described in *Joint Vision 2010*.

For a more complete discussion of the Revolution in Military Affairs and *Joint Vision 2010*, see Chapter 11.

### *Evaluation of FY 1999 Performance*

The Department met each of the performance targets for this goal in FY 1999, and anticipates meeting all but one of the targets in FY 2000. Because the metric on annual procurement spending is a leading indicator, results for FY 2000 are already known. Relative to the FY 1999 level of approximately $49 billion, funding for modernization will rise to almost $54 billion in FY 2000, an increase of more than 8 percent. With the FY 2001 President's Budget, the Department has fulfilled its QDR commitment to increase annual procurement spending to at least $60 billion by FY 2001, supporting investment in new technologies and capabilities.

More than 94 percent of DTOs were executed successfully in FY 1999, further demonstrating the Department's commitment to maintaining its military preeminence through modernization.

In FY 1999, the Department took a major step toward transforming U.S. forces for 21st century operations by establishing a robust program of joint concept development and experimentation. USJFCOM conducted its first major joint experiment as a proof-of-process event. Additional information regarding the Department's ongoing activities and future plans for the transformation of the military force can be found in Chapter 11.

### *Supporting Metrics: FY 1999 Performance Report and FY 2001 Performance Plan*

Three metrics support Performance Goal 2.2: annual procurement spending, status of defense technology objectives, and joint experiments.

**Transformation Metrics**

```
┌─────────────────────────────────────────────────────────────────┐
│                                                                   │
│              ┌─────────────────────────────┐                      │
│              │     CORPORATE GOAL 2         │                      │
│              │         PREPARE              │                      │
│              └─────────────────────────────┘                      │
│                                                                   │
│      ┌───────────────────────────────────────────────────┐       │
│      │            Performance Goal 2.2                    │       │
│      │   Transform U.S. Military Forces for the Future    │       │
│      └───────────────────────────────────────────────────┘       │
│                                                                   │
│   ┌──────────────────┐  ┌──────────────────┐  ┌──────────────┐    │
│   │Annual Procurement│  │ Status of Defense│  │    Joint     │    │
│   │    Spending      │  │Technology Object.│  │ Experiments  │    │
│   └──────────────────┘  └──────────────────┘  └──────────────┘    │
│                                                                   │
└─────────────────────────────────────────────────────────────────┘
```
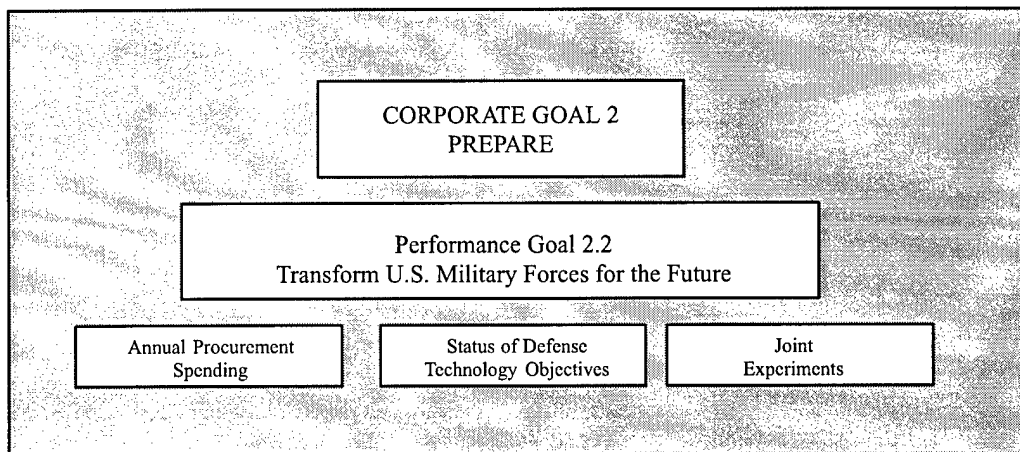
| Performance Measure 2.2.1 – Annual Procurement Spending | | | | | | | |
|---|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal/Actual | | FY 2001 Goal |
| President's Budget | 38.9 | 42.6 | 48.7[a] | 48.7[b] | 54.0[a] | 53.0[b] | 60.0 |
| Amount Appropriated | 44.3 | 44.9 | N/A | 50.9 | N/A | 54.2 | N/A |
| [a] QDR-projected funding level. | | | | | | | |
| [b] Does not include supplemental requests. | | | | | | | |

**Metric Description.** To achieve an appropriate balance between modernization investments and O&M expenditures, the QDR called for a substantial increase in funding for modernization. The Department's procurement spending goals are closely linked to its plan to exploit the Revolution in Business Affairs. Implementing the recommendations of the QDR and the Defense Reform Initiative will help reduce cost growth in the operating accounts, which causes the migration of funds from investment accounts.

Performance Measure 2.2.1 is an investment metric designed to track the Department's commitment to force modernization in its budget process. Annual goals are set in advance of the budget process, and performance is judged across the entire process (i.e., did the President's Budget request to Congress meet the Department's investment goal?). Annual appropriation amounts are included in the table for this metric in order to account for supplemental requests and congressional changes to the Administration's budget requests.

**V&V Methodology.** This measure relies entirely on the Department's budgetary process to develop data. At each step of the budget process, Service procurement plans are reviewed against the Department's annual expenditure goal, to allow for necessary adjustments prior to submission of the President's Budget. While input goals are generally less predictive of performance than output or outcome goals, the Department feels confident in the validity of this measure. Simply put, it is good business practice to track and report the level of capital improvements being made to operating systems.

The annual procurement funding targets were established by the 1997 QDR, which serves as the Department's strategic plan. The next QDR, to be conducted in 2001, will assess inventory modernization requirements for the first part of the century and establish annual investment targets, as appropriate.

**Actual and Projected Performance.** DoD essentially met its intermediate goals for procurement in FY 1999 and FY 2000 and, with the FY 2001 President's Budget, has reached the long-term QDR goal of $60 billion.

| Performance Indicator 2.2.2 – Status of Defense Technology Objectives as Judged by Technology Area Review Assessments | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| Percent of DTOs Judged Green (on track) | 93 | 96[a] | ≥ 70 | 94 | ≥ 70 | ≥ 70 |
| Total Number of DTOs | 286 | 352 | N/A | 347 | N/A | N/A |
| [a] Corrected from preliminary figure given in the FY 2000 GPRA performance plan. | | | | | | |

**Metric Description.** Each DTO is reviewed every two years. Half of the DTOs are evaluated one year and the other half the following year. Independent peer review panels, called Technology Area Review and Assessment (TARA) teams, conduct the reviews.

**V&V Methodology.** Each TARA team includes 10 to 12 members, at least two-thirds of whom come from outside DoD. The non-DoD members include experts in relevant fields from other U.S. government agencies, private industry, and academia. S&T stakeholders (e.g., senior S&T officials, the Joint Staff, and technology customers) attend the reviews as observers. The TARA teams assess DTOs in terms of three factors—budget, schedule, and technical performance—and assign the programs a Red, Yellow, or Green rating based on how well they are progressing toward their goals. The following criteria are used in assigning ratings:

- Green – Progressing satisfactorily toward goals.

- Yellow – Generally progressing satisfactorily, but some aspects of the program are proceeding more slowly than expected.

- Red – Doubtful that any of the goals will be attained.

The DTO ratings are semi-quantitative metrics, reflecting the opinions of independent experts. This method of peer review is accepted and endorsed by the S&T stakeholders. Adjustments are made to program plans and budgets based on the ratings awarded.

**Actual and Projected Performance.** The Department met its FY 1999 performance goal for DTOs. No shortfall is projected for FY 2000.

| Performance Indicator 2.2.3 – Joint Experiments | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| Number of Joint Experiments Conducted | N/A | | Establish Program | Program Established | 14 | 24 |

**Metric Description.** The Joint Experimentation Office, established by USJFCOM in 1999, oversees the Department's joint experimentation program. The program is proceeding in building-block fashion from simple to more complex experiments, with initial joint experiments piggybacking on planned Service experiments. While the initial experiments are being conducted, new doctrine is being written and scheduled for testing in the future. As with all experiments, both successes and failures will occur. The results, whether successful or not, provide insights leading to the new capabilities envisioned in the RMA. Ultimately, large stand-alone experiments are anticipated.

**V&V Methodology.** USJFCOM drafts the Department's annual joint experimentation report to Congress. The report describes plans for joint and combined exercises developed by the Joint Battlelab Center, the Service battlelab system, and the Joint Warfighting Center. USJFCOM collects results from the Services and other participants as experiments are conducted. Semiannually, the Secretary of Defense, the Chairman of the Joint Chiefs of Staff, and the USJFCOM Commander appraise the status of the joint experimentation program.

**Actual and Projected Performance.** The FY 1999 objective of establishing a detailed experimentation plan was accomplished. The FY 2000 goal, which calls for conducting 14 experiments, was derived from preliminary plans developed in 1998. The Department now expects to conduct 17 joint experiments in FY 2000, exceeding the target.

## PERFORMANCE GOAL 2.3 – STREAMLINE INFRASTRUCTURE THROUGH BUSINESS REFORM

U.S. military forces and operations are changing dramatically in response to evolving security demands and advances in technology. The forces contemplated by *Joint Vision 2010* and the RMA will require a radically different support structure. Effecting these changes will necessitate steadily increasing investments that can best be offset by increased efficiencies in support operations. Just as combat forces will become more agile and capable, the changes in infrastructure are designed to produce an increasingly responsive support structure.

The 1999 DoD Logistics Strategic Plan identified areas of opportunity for reducing the total cost of logistics—throughout the full life cycle—for supported personnel, weapons, and equipment. Goals for increased efficiency in this area are covered by measures of logistics response time and the ability to track items in the supply channel. Faster delivery and worldwide visibility of assets will allow the Department to reduce supply inventories. More detailed information on logistics metrics can be found in *OSD Operation and Maintenance Overview, FY 2000 Amended Budget Estimates* (February 1999).

As inventory requirements lessen, it is important to make corresponding reductions in stockpiles. Such adjustments recognize the inherent cost of holding any property. Inventory must be warehoused; inventory and real estate must be protected and maintained. Inventory reduction and consolidation of unneeded real assets is a sound business practice. The performance measures for this area therefore assess progress in reducing inventories and eliminating excess real property.

### Evaluation of FY 1999 Performance

The Department continued to make steady progress in streamlining infrastructure in FY 1999. The largest successes were in the logistics reform area. While efforts to reduce infrastructure were highly successful (in some cases showing the best results since the implementation of the QDR), performance in this area was slightly below the ambitious annual targets. The importance of realizing savings from infrastructure as a key means of modernizing the force cannot be understated, and the Department will continue to set and reach for challenging goals.

Since FY 1997, the Department has reduced its supply inventory by more than $7 billion, better aligning inventories to the needs of a smaller, post-Cold War force. In FY 1999 alone, DoD cut inventories by more than $2.5 billion, meeting its FY 2000 inventory reduction goal a year early. Performance also exceeded expectations in the areas of asset visibility and accessibility: in FY 1999, 97 percent of the Department's warehouse inventory could be tracked in real time by the Services or defense agencies (up 3 percentage points from FY 1998). FY 1999 also saw a 12 percentage-point increase (from 82 to 94 percent) over FY 1998 levels in the accessibility of inventory to integrated materiel managers (IMMs). The Department shaved 14 days off the FY 1998 logistics response time for customers—improving on the FY 1999 performance target by about 25 percent. Adopting commercial billing practices has also dramatically increased the ability of the Department to process transportation vouchers, billings, and associated documents. The FY 2000 DoD Logistics Strategic Plan (http://www.acq.osd.mil/log/sci/exinfo/exinfo.htm) outlines further logistics initiatives proposed for FY 2000.

Infrastructure reduction initiatives are also on track. During FY 1999, the Department implemented a new program called strategic sourcing. This program provides for the conduct of functional assessments, designed to determine if processes can be eliminated, improved, or streamlined, regardless of whether the activities are inherently governmental or commercial in nature. This approach has allowed the Department to open more than 55,000 manpower positions to competitive or strategic sourcing—a 6 percent increase over the FY 1999 performance target. FY 1999 also saw the biggest single-year reductions in the National Defense

Stockpile. However, due to deflated worldwide commodity prices and market demand, coupled with revenue limitations on specific commodities and quantities of materials authorized for disposal by Congress, the Department fell 10 percent short of its aggressive performance target for FY 1999.

Finally, although the Department is on track for targets related to disposing of excess land and demolishing unused buildings, the DoD base structure is still too large, and additional base realignment and closure (BRAC) rounds are needed to achieve QDR goals. To get a complete picture of how the Department is reshaping its infrastructure, it is necessary to understand how the efficiency of routine operations is monitored. For example, FY 1999 performance targets for Performance Indicator 2.3.2, Unfunded Depot Maintenance, allow the Department to limit maintenance backlogs to levels that do not jeopardize overall force readiness, while giving the Services enough flexibility to provide optimal throughput for their portions of the military depot system. Similarly, the performance indicators for the Defense Working Capital Fund and the percentage of DoD investments devoted to infrastructure provide senior officials visibility (through the PPBS) into how these funds are managed and allow the Department to initiate improvements as needed. In FY 1999, no significant problems were identified by these performance metrics. The Department will continue to closely monitor infrastructure trends in FY 2000.
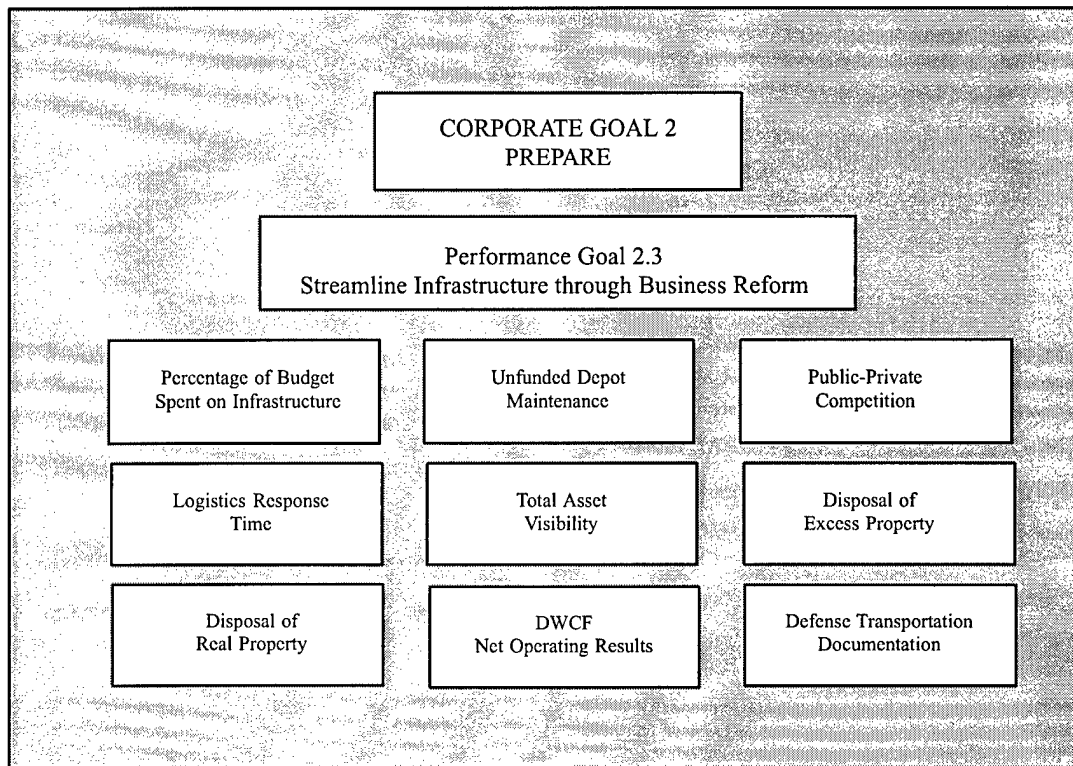
DWCF NOR results for FY 1999 were generally lower than planned at depot maintenance facilities, due to the execution of fewer direct labor hours than anticipated, coupled in many cases with a lack of parts to repair. In the case of the Air Force, material costs were higher than projected. FY 1999 improvements in the supply business areas reflect the impact of Kosovo operations on requirements (which resulted in an increase in orders relative to projections), along with the provision of additional funds by Congress for procurement of parts (which helped make up supply shortfalls). NOR at USTRANSCOM was lower than planned due to a change in the mix of flight operations resulting from Kosovo and other contingency deployments.

Chapter 15 discusses the Department's ongoing efforts to reduce infrastructure. Appendix K provides more detailed infrastructure data.

### Supporting Metrics: FY 1999 Performance and FY 2001 Performance Targets

Nine metrics support Performance Goal 2.3: infrastructure budget shares, unfunded depot maintenance, public-private competitions, logistics response time, total asset visibility, disposal of excess property, disposal of excess real property, net operating results for the Defense Working Capital Fund, and defense transportation documentation.

**Streamlining Metrics**

```
                    ┌─────────────────────────┐
                    │    CORPORATE GOAL 2     │
                    │        PREPARE          │
                    └─────────────────────────┘

              ┌───────────────────────────────────────┐
              │         Performance Goal 2.3           │
              │ Streamline Infrastructure through Business Reform │
              └───────────────────────────────────────┘

   ┌──────────────────┐  ┌──────────────────┐  ┌──────────────────┐
   │ Percentage of Budget │ Unfunded Depot  │  │  Public-Private  │
   │ Spent on Infrastructure │ Maintenance  │  │   Competition    │
   └──────────────────┘  └──────────────────┘  └──────────────────┘

   ┌──────────────────┐  ┌──────────────────┐  ┌──────────────────┐
   │ Logistics Response │  │   Total Asset   │  │   Disposal of    │
   │       Time        │  │   Visibility    │  │ Excess Property  │
   └──────────────────┘  └──────────────────┘  └──────────────────┘

   ┌──────────────────┐  ┌──────────────────┐  ┌──────────────────┐
   │   Disposal of    │  │      DWCF       │  │ Defense Transportation │
   │  Real Property   │  │ Net Operating Results │ Documentation  │
   └──────────────────┘  └──────────────────┘  └──────────────────┘
```

| **Performance Indicator 2.3.1 – Percentage of the DoD Budget Spent on Infrastructure** | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual[a] | FY 1998 Actual[a] | FY 1999 Goal/Actual[a] | | FY 2000 Goal[a] | FY 2001 Goal[a] |
| Infrastructure Spending[b] | N/A | N/A | N/A | N/A | N/A | N/A |

[a] Values for past and projected performance targets may differ slightly from values published in previous performance plans, due to normalization.

[b] Data will be submitted as part of the update to Appendix L of this report.

**Metric Description.** The Department has developed a definition of infrastructure based on the categories of funding reflected in the FYDP. Since FYDP data extend more than a decade into the past, this metric is a useful indicator, but not a precise measure, of infrastructure trends.

Defense infrastructure is defined as activities that support or provide control over military forces from fixed installations. Real property maintenance, environmental compliance, test ranges, and some logistics depots are part of the infrastructure that supports military facilities and equipment. Also included are personnel support costs (such as recruiting, pilot training, and the Defense Health Program) as well as command and control elements (such as CINC headquarters and air traffic control systems).

Because there is no single benchmark for this indicator, actual and projected budget shares are presented in lieu of a goal. A downward trend in this metric would indicate that the balance is shifting toward less infrastructure and more combat forces.

**V&V Methodology.** This metric is updated each time the FYDP database is revised. The Institute for Defense Analyses, a federally funded research and development center, reviews and normalizes the data to adjust for the effect of FYDP accounting changes that might mask true content changes. The normalization process converts all data to execution-year dollars (FY 1999 dollars for this report). It is therefore possible for past-year percentages of infrastructure to shift slightly when expressed in execution-year dollars, since different parts of the DoD budget are subject to different rates of inflation.

**Actual and Projected Performance.** The Department continued to reduce its infrastructure in FY 1999, in accordance with QDR guidance. Further reductions are planned in FY 2000. Exact values for past and projected targets will vary slightly from previously published values, due to normalization. Revised infrastructure values will be submitted with the update to Appendix L of this report.

| Performance Indicator 2.3.2 – Unfunded Depot Maintenance Requirements ($ in Millions) | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal[a] |
| Army | 457 | 543 | 440[b] | 454[a] | 191[b] | 254 |
| Navy | 782 | 608 | 585[b] | 630[a] | 779[b] | 917 |
| Air Force | 226 | 270.5[c] | 187.8[b] | 104[a] | 339[b] | 223 |

[a] Preliminary figures. Final values will be included in the President's FY 2001 budget submission (databook).

[b] Reflects adjustments to the goal identified in the FY 2000 GPRA performance plan, which did not account for final revisions to the FY 2000 budget request.

[c] Revised. The figure given in the FY 2000 GPRA performance plan—$218 million—applied to the active component only. When the Air National Guard and Air Force Reserve are included, the requirement increases to $270.5 million.

**Metric Description.** Unfunded depot maintenance is the difference, in dollars, between Service estimates of depot maintenance expenditures needed to keep all equipment fully operational and the amount of maintenance actually funded in the budget. The FY 2001 goals reflect the outcome of budget decisions made during the PPBS process.

The Services determine annual maintenance requirements from projected usage rates of equipment. Service funding requests are generally lower than forecast requirements, but the unfunded portion of the requirement does not necessarily mean that maintenance will be forgone. Inspections accomplished prior to and during depot maintenance sometimes identify overhaul options that would be less costly to carry out than those reflected in the original workload projections. Moreover, unscheduled repairs often satisfy depot maintenance requirements. Performance Indicator 2.3.2 permits the comparison of unfunded requirements over time. An upward trend indicates a higher likelihood (but not a certainty) that needed maintenance will not be accomplished.

Performance Indicator 2.3.2 is not intended to measure the success of the depot maintenance program in any given year. Annual performance of depot maintenance programs is captured under Performance Indicator 2.3.8, Defense Working Capital Fund. In turn, that metric's evaluation of each working capital fund is supported by underlying cost, timeliness, and quality objectives.

**V&V Methodology.** Service requirements are reviewed annually through the PPBS process. The intent of these reviews is to ensure the Department has in place an executable program that will prevent maintenance backlogs from growing substantially over time. The reviews also provide a means of verifying that Service-proposed expenditures for depot maintenance protect assigned readiness levels in the budget year.

**Actual and Projected Performance.** The Department effectively met its performance target for unfunded maintenance in FY 1999. While the Army fell 3 percent short of its goal, the Navy and Air Force exceeded their goals by 24 percent and 45 percent, respectively. No significant shortfalls are projected for FY 2000.

| Performance Measure 2.3.3 – Public-Private Sector Competitions | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| Number of Positions Subject to A-76 Competitions or Strategic Sourcing Reviews | 26,095 | 39,500[a] | 52,000 | 55,800 (preliminary)[a] | 53,400 | 37,331 |
| [a] Preliminary data are collected at the end of the fiscal year and are reviewed and updated by the third quarter of the next year. Therefore, the FY 1998 figure reflects a revision of the result reported in the FY 2000 GPRA performance plan, and the FY 1999 figure will be subject to revision in the Department's FY 2001 submission. | | | | | | |

**Metric Description.** As part of its efforts to reduce infrastructure, the Department conducts regular reviews of various functions and their associated billets. As a result of these reviews, some functions are retained in-house, others are outsourced, and still others are reengineered.

The Department relies upon competitive sourcing and the powers of the marketplace to directly and indirectly generate efficiencies and savings for functions that are commercial in nature. Direct competition between the public and private sectors is governed by the competitive process established by Office of Management and Budget Circular A-76, *Performance of Commercial Activities*.

Not all support functions can be outsourced. Consequently, the Department is pursuing a pilot project called strategic sourcing to evaluate inherently governmental functions for internal reorganization or consolidation along the lines of commercial best practices.

Performance Measure 2.3.3 tracks the number of positions associated with functions that are reviewed either through the A-76 process or through strategic sourcing.

**V&V Methodology.** A January 1999 review of DoD's military and civilian workforce, conducted by the Deputy Under Secretary of Defense for Installations, identified infrastructure functions that are commercial in nature and could be considered for competition. The new master plan developed from this review includes a provision allowing the Department to pursue strategic sourcing as an added venue to realize savings as the pool of positions eligible for A-76 review diminishes. In order to monitor the overall progress of these reviews, the Department will require components to report annually on the number of A-76 competitions and strategic sourcing evaluations they plan to conduct during each of the subsequent five years.

Since these reviews are directly funded, they are tracked—from budget development to execution—through financial management systems.

**Actual and Projected Performance.** The Department met its goals for reviewing civilian and military support positions in FY 1999. Of the 55,800 positions assessed, 42,000 were subject to A-76 competitions and 13,800 were addressed by strategic sourcing. The Department expects to meet or exceed its FY 2000 target for this metric.

| Performance Measure 2.3.4 – Logistics Response Time | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| Logistics Response Time (Days) | 35 | 32 | 24 | 18 | 18 | 15 |

**Metric Description.** Logistics response time is the elapsed time (in days) from customer requisition to receipt of material ordered from the DoD wholesale system. Reducing delivery time improves the readiness of operational units, while lowering inventories and costs. In addition to reducing order-to-receipt time, DoD is moving aggressively to reduce cycle times across all elements of the supply chain. Such efforts include placing greater reliance on electronic contracting (to shorten administrative lead-time) and on flexible manufacturing (to reduce production lead-time). In 1997, DoD began measuring the performance of the wholesale logistics pipeline in a uniform manner, using the Logistics Metrics Analysis Reporting System (LMARS). This

reporting system allows the Department to identify and correct causes of delay and to build predictability, hence customer confidence, into the wholesale delivery system. Future enhancements to logistics response time measurement include efforts to capture retail transactions, local commercial purchases, and use of government purchase cards.

The Department is studying alternative measures of customer service that could improve the overall management of logistics performance. Consequently, the current metric may be refined, augmented, or replaced during the next reporting cycle.

**V&V Methodology.** Data are collected monthly from logistics transactions as they pass through the Defense Automated Addressing System and are fed into the LMARS. LMARS arrays data by a fixed set of business rules, agreed to by the DoD components whose transactions are being measured. This methodology ensures consistent treatment of data and valid comparisons across components.

**Actual and Projected Performance.** The Department exceeded its performance target for logistics response time in FY 1999, achieving the FY 2000 goal a year early.

| Performance Measure 2.3.5 – Visibility and Accessibility of DoD Materiel Assets | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1996 Baseline | FY 1997/1998 Actuals | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| Materiel Asset Visibility and Accessibility | 50 | 60/82 | 80 | 94 | 90 | 94 |

**Metric Description.** The goal of the Total Asset Visibility (TAV) program is to provide DoD users with timely, accurate information on the location, movement, status, and identity of military assets (units, equipment, and supplies) and the capability to perform transactions using that information. The objectives for TAV capability will be achieved in large part by integrating existing and evolving business systems employed by the Services and defense agencies.

Asset visibility is defined as the percentage of DoD's worldwide inventory that is both visible (in databases) and accessible to IMMs (available to process orders against). IMMs are the DoD organizations assigned wholesale management responsibility for given assets or classes of assets Department-wide. Since Performance Measure 2.3.5 tracks inventory visibility, it does not take into account the visibility of items in transit (i.e., items that have been shipped from warehouses to customers).

**V&V Methodology.** The Services and the Defense Logistics Agency (DLA) derive data to support this metric from various sources, including the Supply System Inventory Report and databases such as the Army Total Asset Visibility System. The Office of the Principal Deputy Under Secretary of Defense for Logistics reviews the data quarterly to identify trends requiring management attention.

**Actual and Projected Performance.** At the end of FY 1999, 97 percent of DoD's worldwide inventory was visible to Service or defense agency tracking systems and 94 percent was accessible by the appropriate IMMs. This represents a significant increase over FY 1998, when the figures were 94 and 82 percent, respectively. The gains achieved in FY 1999 have enabled the Department to reach its FY 2000 steady-state goal one year early.

| Performance Measure 2.3.6 – Disposal of Excess National Defense Stockpile (NDS) Inventory and Reduction of Supply Inventory ($ in Billions) | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| NDS Inventory Disposed[a] | 0.6 | 0.524 | 0.6 | 0.550 | 0.5 | 0.427 |
| Supply Inventory (FY 1995 dollars) | 62.0 | 57.5 | 59 | 55 | 56 | 53 |
| [a] Figures for FY 2000 and prior years are expressed in FY 1996 dollars. From FY 2001 on, budget-year dollars serve as the measure. | | | | | | |

**Metric Description.** This performance measure includes two related but distinct metrics. The first tracks reductions in the NDS, which is composed of general commodities and raw materials. The second measures the supply system inventory of repair parts and finished goods.

The NDS inventory contains strategic and critical materials needed to meet military, industrial, and essential civilian demands during a national emergency, when domestic and foreign supplies are likely to be insufficient. The baseline value of the stockpile was $6.1 billion in 1996. Since prices of individual commodities in the stockpile are subject to market fluctuations, the total value of the stockpile is also subject to large changes. For this reason, the value of material disposed of, rather than stocks remaining, serves as the metric. The Department's initial goal was to reduce the value of the NDS inventory through the disposal of $2.2 billion (FY 1996 dollars) worth of excess stockpile materials by the end of FY 2000. Beginning in FY 2001, the goal will shift from a cumulative target to an annual objective, expressed in budget-year dollars.

Excess NDS materials are disposed of through public sales, using competitive contracting procedures or, where no market exists, other disposal methods. DoD coordinates with the Departments of State and Commerce and other interested parties through a cross-cutting process to ensure that stockpile sales do not skew prices on world markets. A portion of the revenue from NDS sales is used to fund high-priority DoD programs, including those financed through the O&M accounts.

The Defense National Stockpile Center (DNSC) within the Defense Logistics Agency compiles data on NDS sales. There are no known deficiencies with regard to DNSC data-collection means. The DNSC is planning to downsize both storage sites and personnel as the sales program reduces the inventory of stockpiled materials. The long-term goal is to shut down DNSC operations as a separate field activity of the DLA by 2007.

The supply inventory is larger than required to support the current force structure. Since 1995, the Department has planned to reduce supply inventories in line with the downsizing of the force. The goal is to cut holdings from an FY 1989 high of $107 billion to $56 billion by FY 2000 and $48 billion by FY 2003. The key metric associated with this goal is the value of the supply inventory, measured in constant FY 1995 dollars. Surprisingly, some logistics reforms may tend to slow the real or perceived rate of inventory reduction. For example, improvements in total asset visibility (Performance Measure 2.3.5) may cause documented inventory to increase. Moreover, selective inventories of some items (notably aircraft parts) are being increased in response to operational requirements.

The Department will pursue its inventory reduction objectives through improved business practices. The Services and DLA are reducing their supply inventories by:

- Improving equipment reliability.
- Reducing logistics response times and other cycle times (see Performance Measure 2.3.4).
- Improving requirements-generation processes.
- Selectively outsourcing weapons support and other functions.
- Having vendors ship stock directly to end users.
- Promptly disposing of supply stocks when the associated weapon systems are retired from U.S. or allied inventories.

**V&V Methodology.** NDS disposals are usually counted (valued) upon contract award to commercial buyers. Noncommercial disposals are counted/valued as NDS inventory is transferred or disposed of, with the values determined on the basis of market-pricing data (if available) or economic analyses. The DNSC compiles data on NDS disposals.

Supply inventory is tracked using a Web-based inventory projection model developed by the Defense Department in 1994. The model is updated continuously. For

example, active inventory estimates are adjusted as the force structure and personnel levels change. In addition, estimates of active inventory can be reduced by adjusting for the effects of planned management improvements and by comparing trends in inactive to active inventory over 10 years to derive high and low estimates of future use. Secondary inventory data are compiled and managed by the Services and DLA; these data are reviewed routinely as part of the Department's program and budget development process.

**Actual and Projected Performance.** The Department did not meet its NDS disposal goal for FY 1999, but expects to meet its FY 2000 sales goal. The FY 1999 Defense Appropriations Act introduced revenue limitations on specific commodities and quantities of materials that are authorized for disposal, reducing NDS sales authority by approximately $68 million. This statutory limitation, combined with a decrease in demand for commodities, may also affect the Department's ability to meet its cumulative disposal goal of $2.2 billion (FY 1996 dollars) by the end of FY 2000. The Department reduced the value of its supply inventory to $55 billion in FY 1999. With this reduction, it not only achieved its target for FY 1999 but met its FY 2000 objective one year early.

**Performance Measure 2.3.7 – Disposal of Excess Real Property**

| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| Excess Acreage Remaining for Disposal | 234,000 | 205,000 | 182,000[a] | 182,000 | 146,000[a] | N/A |
| Acres Disposed of During the Fiscal Year | 59,000 | 29,000 | N/A | 23,000 | N/A | 20,000[a] |
| Cumulative Square Feet (Millions) Disposed of in the Fiscal Year | N/A | 16.2 | 25 | 30.6 | 41 | 57.7 |
| Cost ($) per Cumulative Square Foot Disposed in the Fiscal Year | N/A | 9.2 | <11 | 9.9 | <11 | <11 |
| [a] For FY 1999 and FY 2000, the goal shows the number of excess acres projected to remain at the end of the fiscal year. For FY 2001, the goal reflects the number of acres to be disposed of during the fiscal year. | | | | | | |

**Metric Description.** Maintaining excess property places a drain on resources that could be applied to force modernization and readiness. Through BRAC, DoD has closed or will close 97 major bases, realigned 55 major bases, and taken action on 235 minor closure and realignment decisions, at a net cost savings of approximately $14.5 billion during implementation. The excess-acres metric tracks land on bases that have been authorized for closure by BRAC decisions but are still under DoD control. The excess acreage is reduced through direct transfers to other federal agencies and by deed conveyances through public benefit transfers, economic development transfers, and market sales. The Department intends to achieve a 50 percent reduction in excess acreage, relative to the revised FY 1996 baseline, by the end of FY 2000. The FY 1996 baseline was reported in error as 291,000 acres in the Department's FY 2000 performance plan. The correct figure— 293,000 acres—was incorporated into the baseline during a 1997 review of property awaiting disposal.

The excess-acreage metric has been modified through the removal from consideration of certain properties. Three parcels from Jefferson Proving Ground, Indiana (51,638 acres), Adak, Alaska (73,923 acres), and Sierra Army Depot, California (Honey Lake, consisting of 60,108 acres) were excluded from the metric due to their large size or to technical complications associated with the presence of unexploded ordnance. Therefore, the 50 percent goal has been applied to the remaining 293,000 acres (adjusted baseline) associated with the installations approved for closure under BRAC. The goal of eliminating 50 percent of the surplus property equates to a reduction of 146,000 acres. Congress appropriated $672 million in FY 2000 to support BRAC. The Department is requesting an appropriation of $1.12 billion for the BRAC program in FY 2001.

While the problem of excess bases has captured media and public attention through the actions of the Base Realignment and Closure Commission, there is a lesser but real problem of excess and obsolete structures on bases the Department does not desire to close. On these bases, installation commanders report they are often forced to retain obsolete and excess facilities because they lack the funds to demolish or dispose of the properties. This excess inventory wastes O&M monies needed elsewhere and presents serious safety concerns. To

ameliorate this situation, the Department has undertaken a Defense Reform Initiative to demolish and dispose of 80 million square feet of excess space at military facilities by FY 2003. This action will support the RMA by streamlining the facilities infrastructure and reducing the potential for migration of funding from investment to operating accounts. For each Service, the Department has established a separate group of budget program elements and has provided funding sufficient to meet both the annual targets and the overall goal.

**V&V Methodology.** For the excess-acreage metric, statistics on property disposals are obtained from base transition coordinators, verified by the appropriate Service, and then fed into a database maintained by the Office of Economic Adjustment within the Office of the Deputy Under Secretary of Defense for Installations. The number of acres approved for transfer is updated as

property transactions are completed. The properties are well defined, since they are connected to BRAC actions. Data are verified by conducting real estate surveys. For the facility-demolition metric, major commands report annually to Service headquarters on the number of buildings demolished over the past year. The Services, in turn, report on the status of building demolition projects during the Department's annual program review.

**Actual and Projected Performance.** The Department met its goal for disposing of excess acreage in FY 1999 and expects to meet, by the target date of FY 2000, its original mid-term goal of a 50 percent reduction from the revised FY 1996 baseline.

The Department exceeded its FY 1999 goal for disposing of excess buildings. No shortfalls are expected in FY 2000.

## Performance Indicator 2.3.8 – DWCF Net Operating Results ($ in Millions)

| | FY 1997 Goal/Actual | | FY 1998 Goal/Actual | | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|---|---|
| **Army** | | | | | | | | |
| Supply Maintenance | -13.0 | -27.9 | 9.8 | 21.9 | -4.9 | 47.6 | -3.3 | -27.7 |
| Depot Maintenance | 47.6 | -136.3 | 18.3 | 133.7 | 9.6 | 71.1 | -26.7 | 6.0 |
| **Navy** | | | | | | | | |
| Supply Maintenance | -69.4 | -209.5 | 87.5 | 26.3 | 65.9 | -102.1 | 42.7 | -68.3 |
| Aviation Depot Maintenance | -10.3 | 18.7 | -21.8 | -18.3 | -13.8 | -40.7 | +1.2 | 28.9 |
| Shipyard Maintenance | 30.8 | -3.4 | 83.1 | 83.4 | 4.0 | -22.5 | -9.9 | 3.5 |
| **Air Force** | | | | | | | | |
| Supply Maintenance | 21.1 | 28.6 | 36.6 | 316.7 | -216.2 | -13.1 | -169.5 | -129.5 |
| Depot Maintenance | 156.3 | -236.3 | 200.1 | -34.6 | 133.2 | 43.4 | -79.5 | -34.4 |
| **USTRANSCOM** | | | | | | | | |
| Transportation | 42.7 | -18.2 | 80.7 | 287.8 | 8.7 | -61.7 | -155.3 | 23.9 |
| NOTE: DWCF = Defense Working Capital Fund. | | | | | | | | |

**Metric Description.** Defense working capital funds are used to finance selected DoD activities. Customers purchase products and services at prices that reflect all the direct and indirect costs of a given DWCF budget activity. Customer accounts are financed through direct appropriations, at a level commensurate with expected purchases from the respective fund. In addition to selling products and services to customers, DWCF budget activities may make purchases from one another, using sales revenue. As the DWCFs cover widely differing areas of the Department's business operations, they each have unique management goals, which are reflected in their budget submissions.

Net operating result (NOR) is a management measure common to all working capital funds. NOR is the difference between an individual fund's revenue and its costs. During the PPBS process, NOR goals are created to cancel out any shortages or surpluses from previous years. An NOR that is higher than the assigned goal indicates that a fund may have exceeded expectations; conversely, one that is lower suggests a fund may have been less efficient than desired. If the NOR target for a working capital fund is not met, the unique supporting measures for that fund (Table I-6) provide insights into the underlying causes.

| DWCF Supporting Measures | | | Table I-6 |
|---|---|---|---|
| **Activity Group** | **Timeliness** | **Cost** | **Quality** |
| Army Supply Management | UMMIPS standards set in DoD policy instruction | –Unit cost retail, wholesale<br><br>–NOR | Fill rate |
| Army Depot Maintenance | Schedule conformance | –Unit cost per DLH<br>–NOR | Percentage of quality defects |
| Navy Supply Management | UMMIPS standards set in DoD policy instruction | –Unit cost retail, wholesale<br><br>–NOR | Fill rate |
| Navy Depot Maintenance | Schedule conformance | –Unit cost per DLH<br>–NOR | Percentage of quality defects |
| Navy Shipbuilding | Schedule conformance | –Unit cost per DLH<br>–NOR | Percentage of quality defects |
| Air Force Supply Management | UMMIPS standards set in DoD policy instruction | –Unit cost retail, wholesale<br><br>–NOR | Fill rate |
| Air Force Depot Maintenance | Schedule conformance | –Unit cost per DLH<br>–NOR | Percentage of quality defects |
| USTRANSCOM | UMMIPS standards set in DoD policy instruction | –NOR<br>–Variety of unit costs | On-time arrivals and departures |
| NOTE: DLH = direct labor hour; UMMIPS = Uniform Material Movement Issue and Priority System. | | | |

**V&V Methodology.** The Department obtains the data needed to calculate NOR from the financial records for the DWCF maintained by the military services and defense agencies. The Department's NOR calculations conform to the auditing requirements established by DoD Regulation 7000.14, the *Department of Defense Financial Management Regulation,* and by the Chief Financial Officers Act of 1990. NOR information is consolidated Service- and agency-wide, then sent to the respective headquarters for review. The Office of the DoD Comptroller checks the consolidated reports monthly for accuracy, comparing results to target amounts. During quarterly execution reviews, senior financial and logistic managers from the DoD Comptroller and Service staffs jointly examine the data to identify positive or negative trends in productivity and to monitor operational and cost-efficiency trends.

**Actual and Projected Performance.** NOR was generally lower than planned at depot maintenance facilities and in the transportation fund in FY 1999 due to smaller-than-expected workloads. The supply business areas had greater-than-expected returns due largely to the impact of contingency operations.

## Performance Indicator 2.3.9 – Qualitative Assessment of Defense Transportation Documentation

This metric (formerly designated Performance Indicator 2.4.8) tracks implementation of the defense reform initiative on transportation. The goal of the initiative is to eliminate DoD-unique documentation requirements, improve data accuracy, decrease documentation process costs, reduce payment cycle times, and increase the effectiveness of transportation movement and financial processes. Through such enhancements, the Department seeks to increase transportation efficiency and reduce infrastructure costs for it and its commercial partners.

**Metric Description.** Means and strategies for accomplishing this goal include using commercial rather than government-unique transportation documentation, reducing data requirements, using purchase cards to pay for both commercial and intragovernmental transportation services, and prototyping concepts in four modes of transportation (airlift, sealift, truckload/less-than-truckload, and express carrier) to validate concepts and identify and resolve issues.

A number of supporting metrics are tracked to evaluate performance in implementing this initiative. Examples include:

- The number and dollar value of transportation transactions processed for DoD by a commercial bank (U.S. Bank PowerTrack system) as opposed to those processed by the Defense Finance and Accounting Service (DFAS).

- Timeliness of commercial carrier payments.

- Number of carriers using PowerTrack.

- Number of DoD shippers using PowerTrack.

- Number/dollar value of late payments from DFAS to U.S. Bank per month.

- Government-unique transportation documents eliminated.

As the initiative matures year to year, the number and weighting of the supporting quantitative metrics will change. Therefore, in FY 2000 and FY 2001, the Department will continue to use qualitative assessments to evaluate progress toward achieving a more responsive and affordable transportation system.

**V&V Methodology.** Data for the supporting metrics will be derived from the financial records of U.S. Bank and DFAS. The data are considered highly reliable due to the accounting standards established by commercial institutions.

**Qualitative Assessment of FY 1999 Performance and Implications for FY 2000.** During two quarters of FY 1999, there was a 93 percent decrease in the number of payments made by DFAS for the areas of transportation services covered by this initiative. The decline resulted from the fact that PowerTrack pays and combines multiple vendor bills, submitting aggregate statements and bills to DFAS. Processing by this commercial system results in payments that are 27 to 87 days faster than services billed individually to DFAS. Direct DoD savings will take several years to realize as lower annual workloads reduce Department staffing requirements.

For FY 2000, this initiative will be broadened to include use of the PowerTrack system to pay for shipping that is provided by DoD-owned transportation assets and billed under the Transportation Working Capital Fund. This will allow DoD customers to use a single billing system for both organic and commercial transportation services. Additionally, in FY 2000 the Department will test operations with third-party logistics firms—that is, firms that determine transportation needs and hire and pay transportation subcontractors directly. The tests will address the potential savings from, operational limits on, and wartime mobilization implications of doing business with third-party firms.

## PERFORMANCE GOAL 2.4 – IMPROVE ACQUISITION

The QDR stressed the need to exploit the Revolution in Business Affairs (RBA) to radically reengineer defense infrastructure and defense support activities. The RBA calls for reducing overhead and streamlining infrastructure; taking maximum advantage of acquisition reform; outsourcing and privatizing a wide range of support activities; leveraging commercial and dual-use technology; reducing unneeded standards and specifications; using integrated processes and product development; and increasing cooperative development programs with allied nations. Performance Goal 2.3 included those aspects of the RBA that involve management of services and physical property held by DoD. Performance Goal

2.4 addresses acquisition reform and defense reform initiatives involving the acquisition of new property, systems, and services. The ultimate purpose of all business efficiency efforts in the Department is to shift resources to the operating forces.

This goal echoes the themes of modern procurement practices: minimizing product introduction times and cost growth, while simplifying the purchase process through the adoption of modern practices, such as purchase cards and electronic commerce.

### Evaluation of FY 1999 Performance

Overall, despite some setbacks in managing acquisition cost growth, the Department made solid progress during FY 1999 toward improving acquisition support for U.S. military forces. The gains realized in this area have moved the Department steadily closer to its long-term objective of becoming the premier organization for effective and efficient purchasing practices.

In FY 1999, the Department held cycle time for major acquisition programs to 95 months for the second year in a row, down from a high of 132 months. During FY 2000, the Department will continue to pursue initiatives to speed the requirements-generation and budgeting processes. The Department will also introduce a method for measuring the success of operational tests.

Other performance targets supporting this goal were met or exceeded. For example, manpower associated with overhead functions continued to decrease at planned rates. The Department also exceeded its FY 1999 micropurchase goal by 11 percent, increasing performance over FY 1998 levels by almost 5 percent. Performance in each of these areas is expected to show continued improvement in FY 2000.
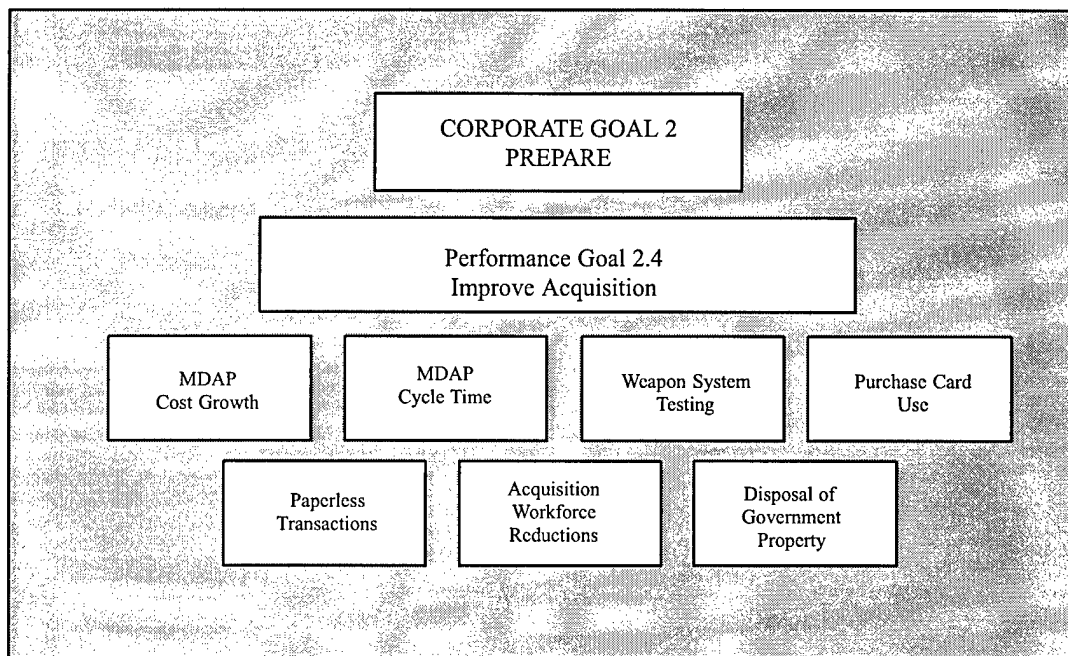
Unfortunately, the Department fell significantly short of its performance target for reducing cost growth: the aggregate cost of major acquisition programs grew 3 percent in FY 1999, which was triple the target value for the year. FY 1999 performance fell short of the goal due primarily to unexpected increases in costs associated with developmentally high-risk ballistic missile defense programs—notably the Army's Theater High-Altitude Area Defense system. Although long-term cost trends remain on a downward path, the Under Secretary of Defense for Acquisition, Technology, and Logistics will establish a special working group to closely monitor Service cost-management efforts during FY 2000.

Chapter 14 provides more details on DoD acquisition and logistics reform initiatives.

### Supporting Metrics: FY 1999 Performance and FY 2001 Performance Targets

Seven metrics support Performance Goal 2.4: cost growth in major defense acquisition programs (MDAPs), MDAP cycle time, weapon system testing, use of government purchase cards, paperless transactions, acquisition workforce reductions, and disposal of government property held by contractors.

**Acquisition Metrics**

```
                    CORPORATE GOAL 2
                        PREPARE

                  Performance Goal 2.4
                   Improve Acquisition

   MDAP          MDAP        Weapon System   Purchase Card
Cost Growth    Cycle Time      Testing           Use

       Paperless      Acquisition      Disposal of
      Transactions    Workforce        Government
                      Reductions        Property
```

**Performance Measure 2.4.1 – Major Defense Acquisition Program Cost Growth (In percents)**

|  | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
|---|---|---|---|---|---|---|
| MDAP Cost Growth | +0.1 | -0.3 | <1.0 | +3.1 | <1.0 | <1.0 |

**Metric Description.** Cost growth is the difference between MDAP program costs in the current-year budget and the previous year's budget, divided by the program costs for the previous year.

Only MDAPs continuing from the previous year are included in this metric; adjustments are made for inflation and for changes in quantities ordered. Cost growth can arise for various reasons, including technical risk, schedule slips, and overly optimistic cost estimating. Acquisition reform seeks to reduce cost growth from all sources, providing an output goal for the procurement manager of an individual system, as well as for an entire Service. Managerial responses are expected to include both specific cost-control initiatives and process changes. The objective is to keep the metric to an increase of 1 percent or less each year.

**V&V Methodology.** Data on MDAP cost growth are collected from the annual Selected Acquisition Reports (SARs). SAR data provide a means to verify and validate the measured values. There are no known SAR data deficiencies. It is important to emphasize that this metric is not an absolute measure of research, development, and procurement costs. Some growth in MDAP costs is unavoidable due to program changes; such increases may occur as a result of best management practices. When the 1 percent goal is exceeded, the SAR reports provide data useful in isolating specific causes. Standards for SAR data are set by DoD Instruction 5000.2, *Defense Acquisition Management Policy and Procedures.*

**Actual and Projected Performance.** The Department did not meet its FY 1999 performance target for MDAP cost growth. FY 1999 saw the largest increase in MDAP costs in a decade; major contributors were programs managed by the Department of the Army and the Ballistic Missile Defense Organization. The Department does not predict any shortfall in achieving its goal for FY 2000.

| Performance Indicator 2.4.2 – MDAP Cycle Time | | | | | |
|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| Average Months from Program Start to Initial Operational Capability | 97 | 95 | <99 | 95 | <99 | <97 |

**Metric Description.** During the 1960s, a typical acquisition took seven years to complete. By 1996, the same acquisition required 11 years from program start to initial operational capability. Recent efforts to reverse this trend include advanced concept technology demonstrations; improved management oversight afforded by integrated product teams; and more extensive use of commercially-derived items.

The Department is starting to impose the same rigor it applies to performance and cost analyses to development and production schedules. Rapid development and fielding of weapon systems enables U.S. forces to stay ahead of potential adversaries in fielding new technologies.

DoD has established the objective of delivering new MDAPs to the field in 25 percent less time than was the case for programs initiated prior to 1992.

**V&V Methodology.** The key measure for this goal is the average elapsed time from program start to initial operational capability, measured in months, for all MDAPs in development during a given calendar year. The 1996 baseline is 132 months, representing the average cycle time for 58 MDAPs begun before 1992. Average cycle time is computed using schedule estimates or data drawn from SARs and Acquisition Program Baselines. The Department also monitors MDAPs through the Defense Acquisition Executive Summary reporting system and the Defense Acquisition Board review process. In FY 1998, the Department began to evaluate cycle times of new MDAPs as well as schedule changes during the PPBS process.

**Actual and Projected Performance.** The Department met its MDAP cycle-time target for FY 1999 and expects to meet the target in FY 2000. At the end of FY 1999, those MDAPs initiated since 1992 had a projected cycle time of 95 months. Without continued management improvements, however, average cycle times could grow beyond 99 months. In order to maintain progress toward the FY 2000 performance goal, the Department will seek to achieve short cycle times for new acquisition programs and work to keep existing programs on schedule.

In an effort to achieve further reductions, the Department has established a goal of cutting average cycle time by 50 percent (i.e., to 66 months) for acquisition programs started after 1998. (Because Performance Indicator 2.4.2 is a weighted average of active MDAPs started in various years, the annual targets for this metric will lag the 66-month goal.) In support of the 50 percent reduction target, the Department is making comprehensive changes in its acquisition management and requirements-generation processes. The Department also is reviewing ways of further integrating cycle-time management into the PPBS process.

| Performance Measure 2.4.3 – Successful Completion of System Operational Test and Evaluation (OT&E) Events | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Preliminary Goal |
| Percentage of OT&E Events Successfully Completed | N/A | N/A | Establish Methodology | Methodology Established | 100 | 100[a] |
| a Subject to revision based on FY 2000 performance. | | | | | | |

**Metric Description.** Test and evaluation programs aim to ensure that U.S. forces are provided with weapon systems and equipment that are effective and suitable for the missions they are designed to accomplish. Future U.S. combat systems will be increasingly interoperable and interdependent; new systems entering service will have to function effectively not only with other systems in the U.S. inventory but also with weaponry and equipment operated by allied and coalition forces. The increased complexity of modern warfare demands rigorous operational assessments and testing throughout the acquisition cycle. The purpose of these assessments is to learn, at the earliest possible time, how a new system or technology will perform from an operational perspective. The OT&E program is designed to support decision makers in maintaining program schedules (Performance Measure 2.4.2) and costs (Performance Measure 2.4.1) by providing operational assessments at the earliest practical time.

Operational testing and evaluation entails numerous tests and assessments of new weapon systems, designed to simulate the needs of, and conditions expected to be faced by, combat forces. Through the OT&E program, data are collected on the effectiveness, performance, suitability, and survivability of new systems.

Performance Measure 2.4.3 monitors the success of the test and evaluation infrastructure in collecting the types and quantities of data needed to fulfill specified learning objectives (measures of effectiveness or performance).

Whether a weapon system passes or fails its tests is not a criterion for success under this measure; rather, the metric focuses on the structure of the testing program and its efficacy in evaluating the weapon system in question. There is also an expectation to communicate findings, when required, to support acquisition milestone reviews and decision points identified in Test and Evaluation Master Plans.

**V&V Methodology.** The Office of the Director for Operational Test and Evaluation tracks learning objectives for OT&E and live-fire events associated with acquisition programs on the OSD Test and Evaluation Oversight List. Action officers are provided an implementation guide outlining procedures for entering data on learning-objective accomplishment into the Program Summary Database. Using criteria set forth in the guide, the action officers report the results of testing activities, usually within six weeks of the events. On a quarterly basis, the Director of OT&E tracks the progress of testing programs and monitors their quality.

**Actual and Projected Performance.** The Department met its FY 1999 performance goal to establish a methodology for this metric. The goal for the first year of the metric's use, FY 2000, is 100 percent. The Director of OT&E will evaluate the results at the end of the fiscal year and adjust the goal for FY 2001, if necessary, to reflect lessons learned in using this new management tool. Thereafter, goals for the metric will be set each year in the Department's GPRA performance plan.

| Performance Indicator 2.4.4 – Purchase Card Micropurchases (In percents) | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1996/ 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| Percentage of Purchases Made by Purchase Card | 52/71 | 86 | 80 | 91 | 90 | 90 |

**Metric Description.** The Army Audit Agency estimates savings of $92 per transaction when supplies or services are procured using government purchase cards. Under the traditional acquisition process, a requisition

document is forwarded sequentially to various functional elements, such as the purchasing component's resource management office (for commitment of funds) and supply manager (to screen for local or national inventories). If a requirement cannot be filled through the component's supply system, a purchase request is forwarded to a local contractor. Use of government purchase cards for micropurchases virtually eliminates this entire workload. Micropurchases are supplies or services (other than construction) valued at less than $2,500. Through purchase card use, the Department has already realized sizable manpower-related savings, which it has redirected to mission elements of the force.

Since 1997, all contracting officers have been required to use purchase cards for micropurchases except in narrowly defined circumstances. The military departments and defense agencies have likewise been directed to abolish nonessential technical screening requirements and to reduce the categories of items that require such screening controls for purchases made with government cards.

Performance relative to the goal is measured by dividing purchase card transactions within the micropurchase threshold by the total number of micropurchases. These data, which are provided to the Federal Procurement Data System and reported on Defense Department Form 1057 (DD-1057), are used to verify and validate the measured values.

**V&V Methodology.** The major data source for this measure is commercial bank statements for purchase card activities. Data on purchase card transactions maintained by commercial banks are considered to be highly reliable due to the accounting standards established by these institutions. The transactions are compared with non-purchase-card micropurchase transactions reported monthly on form DD-1057. Components conduct periodic procurement management reviews to verify DD-1057 data.

**Actual and Projected Performance.** The Department has exceeded its FY 1999 micropurchase goal and met its FY 2000 goal early.

| Performance Indicator 2.4.5 – Percentage of DoD Paperless Transactions | | | | | | |
|---|---|---|---|---|---|
| | FY 1997 Actual[a] | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| **2.4.5A – DRI Goals** | | | | | | |
| Purchase Requests | 71 | 83 | 85 | 96 | 90 | 90 |
| Funding Documents | 69 | 86 | 80 | 97 | 90[b] | 90 |
| Solicitations | 49 | 66 | 70 | 89 | 90 | 90 |
| Awards/Modifications | 21 | 48 | 65 | 89 | 90 | 90 |
| Receipts | 16 | 55 | 50 | 83 | 90 | 90 |
| Payments/Invoices | 13 | 28 | 50 | 56 | 90 | 90 |
| **2.4.5B – NPR Goal** | | | | | | |
| Total Electronic Contracting and Payment Transactions | 27 | 45 | 55[c] | 64 | 64[c] | 90 |

NOTE: DRI = Defense Reform Initiative; NPR = National Partnership for Reinventing Government.

[a] Erroneously listed as FY 1998 actuals in the FY 2000 GPRA performance plan.

[b] Revised from original goal of 80 percent in the FY 2000 GPRA performance plan due to positive FY 1999 results.

[c] Corrected goal. The FY 2000 GPRA performance plan mistakenly displayed DRI goals under metric 2.4.5B. The revised figures reflect the NPR goals.

**Metric Description.** Performance Indicator 2.4.5 is composed of two metrics that draw upon the same underlying data to quantify the Department's progress toward its goal of reducing paper-based transactions. Performance Indicator 2.4.5A reflects the DRI goal of conducting 90 percent of selected transactions electronically by FY 2000. Indicator 2.4.5B supports the NPR goal of achieving a 50 percent reduction (relative to a 1997 baseline) in the number of paper-based transactions by FY 2000.

Through FY 2000, the DRI goals establish a higher overall standard of performance. Since both the DRI and the NPR goals were slated to be reached by FY 2000, the higher DRI goal is carried forward for both metrics in FY 2001. The actual performance shown for Indicator 2.4.5B is based on the weighted average of the six categories of paperless transactions encompassed in Performance Indicator 2.4.5A.

The Department is committed to employing contemporary information technology and commercial best practices to reinvent its contracting processes. Contracting, particularly that related to high-cost weapon systems, consumes a large portion of the defense budget and employs a significant portion of the DoD workforce. To inject information technology and best practices into all contracting processes, the Paperless Contracting Defense Reform Initiative is reengineering and standardizing the Department's contracting and payment practices. Over time, paperless contracting will contribute to reducing acquisition cycle times (Performance Measures 2.3.4 and 2.4.2) and streamlining the acquisition workforce (Performance Measure 2.4.6). Use of government purchase cards (Performance Measure 2.4.4) will be the primary means of achieving paperless contracting for small purchases. The Services and defense agencies, under the auspices of the Defense Reform Initiative, will employ Internet technologies, workflow systems, electronic commerce/electronic data interchange transactions, and digital signature/ public key encryption capabilities to accomplish this goal. For more information on this program and other elements of the DRI, see Chapter 12.

**V&V Methodology.** The Services and defense agencies compile quarterly reports on transactions in each area covered by Performance Indicator 2.4.5, using data gathered from field operating sites. Heuristics have been developed to validate these statistics with data generated by formal DoD reporting systems.

Additionally, the DoD Paperless Contracting Working Integrated Process Team (PC-WIPT) collects monthly and quarterly reports from each Service and defense agency. The group submits a quarterly progress report to the Deputy Secretary of Defense through an oversight panel composed of senior executives with responsibility for implementing the paperless contracting initiative.

Verification is achieved through rigorous standard definitions of metrics and through data-collection templates and written guidance provided to the Services and defense agencies. The PC-WIPT reviews inputs and data trends and pursues anomalous data back to the source data system. Validation is accomplished by an oversight panel that not only reviews the implications of the data but ensures that appropriate types of data are being collected.

**Actual and Projected Performance.** DoD exceeded its targets for paperless transactions in FY 1999 and expects to meet its FY 2000 targets. The lack of widespread acceptance of digital signature and paperless Web-based transactions, both within and outside DoD, remains the largest impediment to achieving this objective.

| Performance Indicator 2.4.6 – Reductions in the Acquisition Workforce (In percents) | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| Reduction from FY 1997 Workforce | Baseline Year | 5.8 | 11.3 | 13.8 | 15 | 22 |

**Metric Description.** The Department is making an active effort to reduce and restructure its acquisition workforce. The goal is to eliminate duplicative functions, consolidate organizations, simplify procedures, improve professionalism, streamline processes, and increase efficiency throughout the Department. Initiatives in this area also contribute to the reduction of defense infrastructure, discussed under Performance Goal 2.3 and Performance Indicator 2.3.1.

**V&V Methodology.** Annual reports are based on budgeted manpower, which is adjusted annually through the

PPBS process. Quarterly, DoD components report personnel levels to the Defense Manpower Data Center, which analyzes the data and provides assessments to the Director for Acquisition Education, Training, and Career Development. The Personnel Data Reporting System is used to cross-check trends in the manpower data supporting this metric. The data are reviewed within the PPBS process, which provides a framework for ensuring their validity.

**Actual and Projected Performance.** The Department exceeded its FY 1999 goal for acquisition workforce reductions and expects to achieve its target for FY 2000.

I-45

| Performance Measure 2.4.7 – Disposal of Unneeded Government Property Held by Contractors | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal |
| Cumulative Value of Tooling and Equipment Disposed of ($B) | 1.1 | 2.5 | 3.0[a] | 4.57 | N/A[b] | 4.75 |

[a] To be achieved by December 31, 1999.

[b] No FY 2000 goal was set because the original disposal objective of $3 billion in contractor-held material was programmed to be achieved in December 1999.. The property disposal target has since been revised upward, to $4.75 billion; this more aggressive objective is expected to be reached in FY 2001.

**Metric Description.** Between FY 1986 and FY 1997, the acquisition value of DoD property in the possession of defense contractors rose to $91 billion, despite repeated efforts to curb growth. The military buildup of the 1980s and the renewed emphasis on developing new weapon systems under cost-reimbursement contracts were factors in that increase.

In order to reverse the property growth trend and reduce the amount of government-owned tooling and equipment in contractors' possession, the Department will either dispose of property no longer needed for contract performance or directly fund its storage separately from acquisition contracts. The key measurement for this performance goal will be the current dollar value of special tooling, special test equipment, and other equipment and material disposed of relative to the total value of such materials in the possession of DoD contractors as of September 30, 1997. DoD contractors are required to report this information on a fiscal-year basis. Reports for the prior year are due during the first quarter of each fiscal year.

The baseline excludes military property (typically provided to contractors for repair or test and evaluation purposes) and real property. There are millions of items in the baseline, some acquired more than 25 years ago. Therefore, it is impractical to convert the acquisition cost for each item to constant dollars. Data are based on contractor reports of excess and underutilized property. There are no known deficiencies in the data-collection process.

**V&V Methodology.** The disposition of property is tracked by the individual Services and reported to the Defense Logistics Agency. DLA then combines the Service data with data that it collects to arrive at a consolidated DoD position. The information is reviewed quarterly by the Director of Defense Procurement.

**Actual and Projected Performance.** At the end of the third quarter of FY 1999, the Department had disposed of $3.87 billion in unneeded government property held by contractors, achieving the original reduction goal.
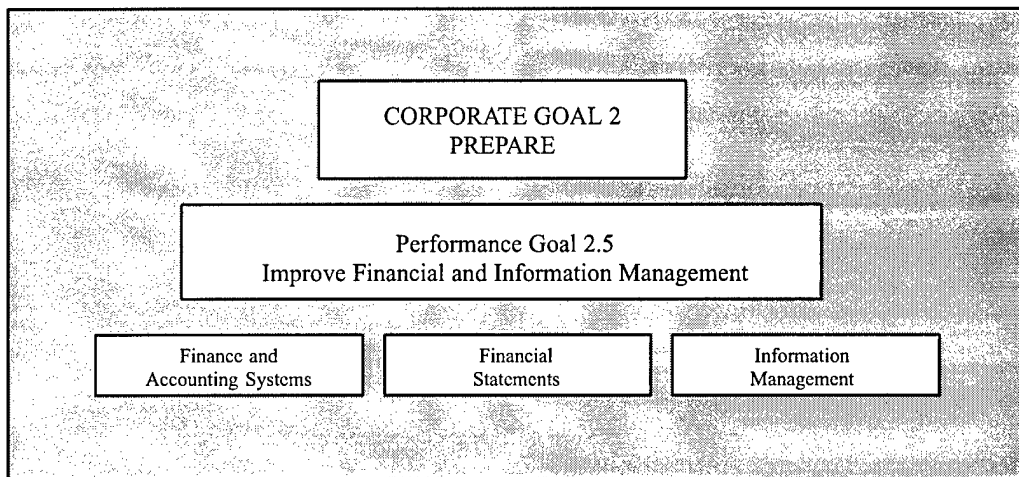
## PERFORMANCE GOAL 2.5 – IMPROVE FINANCIAL AND INFORMATION MANAGEMENT

Management systems support informed decision making. The Department continually strives to provide more accurate, timely, and meaningful information to decision makers by improving the performance of its management tools. Two particularly critical areas supporting DoD's management of limited resources are financial and information technology systems. Each of these areas has its own performance improvement plan. The DoD Financial Management Improvement Plan, discussed in Chapter 13, is the Department's road map for improving financial systems. Likewise, Appendix J discusses the Department's plan to improve the management systems used to support information technology decisions in accordance with the Clinger-Cohen Act of 1996. The metrics supporting this goal measure progress toward improving DoD management systems.

### Supporting Metrics: FY 2001 Performance Targets

The metrics that support Performance Goal 2.5 seek to improve the quality of DoD finance and accounting systems, financial statements, and information management.

**Management Metrics**

```
+--------------------------------------------------------------------+
|                                                                    |
|            +------------------------------------+                  |
|            |        CORPORATE GOAL 2            |                  |
|            |            PREPARE                 |                  |
|            +------------------------------------+                  |
|                                                                    |
|     +------------------------------------------------+             |
|     |         Performance Goal 2.5                    |            |
|     | Improve Financial and Information Management    |            |
|     +------------------------------------------------+             |
|                                                                    |
|   +----------------+  +----------------+  +----------------+       |
|   | Finance and    |  | Financial      |  | Information    |       |
|   | Accounting     |  | Statements     |  | Management     |       |
|   | Systems        |  |                |  |                |       |
|   +----------------+  +----------------+  +----------------+       |
|                                                                    |
+--------------------------------------------------------------------+
```

### Performance Measure 2.5.1 – Reduce the Number of Noncompliant Accounting and Finance Systems

|  | FY 1991 Baseline | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Goal | FY 2001 Goal | FY 2005 Goal |
|---|---|---|---|---|---|---|---|
| Number of Accounting Systems | 197 | 91 | 20 | 13 | 5 | 2 | 0 |
| Number of Finance Systems | 127 | 18 | 6 | 4 | 2 | 1 | 0 |
| Total | 324 | 109 | 26 | 17 | 7 | 3 | 0 |

**Metric Description.** The Department has embarked upon a major streamlining of its accounting and finance systems. The elimination of noncompliant financial systems represents the largest single reform of financial management systems in the history of the Department.

The objective of the Department's initiative is not simply to reduce the number of accounting and finance systems, however. The consolidation, standardization, and modernization of DoD accounting and finance systems is meant to enable the Department to eliminate its outdated, noncompliant accounting and finance systems and replace them with systems that provide more accurate, timely, and meaningful financial information to decision makers. (Accounting and finance systems are compliant when they substantially meet federal financial management system requirements, adhere to appli-cable federal accounting standards, and use the U.S. Standard General Ledger at the transaction level.) The Department tracks its progress in reducing the number of noncompliant accounting and finance systems through the DoD Financial Management Improvement Plan.

**V&V Methodology.** The number of noncompliant accounting and finance systems is reported annually in the DoD Financial Management Improvement Plan. This plan is reviewed by both the General Accounting Office and the Office of the DoD Inspector General.

**Notes on Actual and Projected Performance.** The Department reduced the number of noncompliant accounting and finance systems from 324 in FY 1991 to 17 in FY 1999. This represents a 95 percent reduction from the FY 1991 baseline.

| Performance Measure 2.5.2 – Achieve Unqualified Opinions on Financial Statements | | | | | | |
|---|---|---|---|---|---|---|
| | FY 1997 Actual | FY 1998 Actual | FY 1999 Goal/Actual | | FY 2000 Actual | FY 2001 Goal |
| Number of Financial Statements with at Least a Qualified Opinion | 1 | 1 | 1 | 1 | 1 | 3 |
| Total | 1 | 1 | 1 | 1 | 1 | 3 |

**Metric Description.** An unqualified audit opinion is a determination by independent auditors that DoD financial statements present fairly, in all material respects, the financial position of the Department as of the date of the statements, as well as the results of departmental operations for the year then ended. The auditor's opinion results from the inspection of the Department's financial records to determine compliance with generally accepted accounting principles.

Obtaining unqualified opinions on the Department's financial statements is a difficult challenge. The Department must put in place policies, systems, and practices that enable it to produce consolidated, DoD-wide financial statements, plus statements for various organizational elements. Approximately 80 percent of the information needed to prepare DoD financial statements originates in feeder systems that input data into the Department's financial systems. Thus, achieving a clean audit opinion on financial statements is an effort that involves all DoD functional communities—financial, acquisition, logistics, personnel, medical, and others—and is a DoD-wide management challenge.

The Chief Financial Officer Act of 1990 requires audited financial statements from federal agencies. The Federal Financial Management Improvement Act of 1996 mandates the use of government-wide accounting standards. Unlike many federal agencies, which have only a few appropriation accounts, DoD has numerous such accounts, managed by the three military departments and by selected defense agencies and other organizations. While the number may vary over time, in any given fiscal year the Department may have as many as 500 or more appropriations that must be encompassed within its financial statements.

**V&V Methodology.** Financial statements must be reviewed by an independent audit organization, either the General Accounting Office, the Office of the Inspector General, or a commercial audit firm. The conduct of such reviews, whether they produce an unqualified opinion or not, serves to validate this metric.

**Notes on Actual and Projected Performance.** The Department has obtained an unqualified opinion on its financial statement for the Military Retirement Trust Fund each year since FY 1995. The Department expects to continue to receive unqualified opinions for this trust fund in future years. In addition, by FY 2001, the Department expects to obtain unqualified opinions on the financial statements for two other organizational elements: the Army Corps of Engineers (Civil Works) and the Defense Finance and Accounting Service. The Department recognizes that it is not likely to achieve, by FY 2001, an unqualified opinion on each of the remaining financial statements that it, and each of its components, is required to prepare. However, various components within the Department are striving to obtain unqualified opinions on portions of their financial statements by FY 2001. Achievement of such partial results would represent important, noticeable progress toward the ultimate goal of an unqualified opinion on all of the statements required of each of the applicable components of the Department.

| Performance Measure 2.5.3 – Qualitative Assessment of Reforming Information Technology Management |
|---|
| Performance Indicator 2.5.3 is a qualitative assessment of the Department's progress in implementing the objectives of Goal 3 of the DoD Information Management Plan. Goal 3 calls on the Department to reform its information technology management processes in order to increase their efficiency and enhance their contribution to DoD missions. |

As resources decline, information and information technology must be managed as a strategic resource, from a DoD-wide perspective. The Department must base information and information technology decisions on the contribution of information technologies to the effectiveness and efficiency of military missions and supporting business functions. Consequently, investments in information technologies need to be linked to mission goals, strategies, and architectures, using various analytic tools. Specific goals, objectives, and strategies for improving DoD's management of information can be found in the Information Management Strategic Plan (http://www.c3i.osd.mil), discussed in Appendix J.

**Metric Description.** Performance Indicator 2.5.3 is a qualitative assessment of DoD's progress in reforming information technology management processes. It evaluates, in particular, performance in achieving three key objectives:

- Institutionalization of the provisions of the Clinger-Cohen Act of 1996 (formally titled the Information Technology Management Reform Act).

- Institutionalization of fundamental information technology management reforms.

- Improvements in the DoD information technology workforce.

**Qualitative Assessment of FY 1999 Performance and Implications for FY 2000.** This is a new measure, and results will be assessed for the first time in DoD's FY 2000 GPRA performance report.

## RELATED ISSUES

### FYDP Database

The Future Years Defense Program (FYDP) database enables decision makers to manage the allocation of the Department's resources by delineating the relationship between those resources and the missions they support. The FYDP contains information about the personnel and fiscal resources apportioned to each program element over time—including prior years, the current year, a second biennial budget year (if applicable), and four years following the biennial budget years. (For example, the FYDP associated with the FY 2001 President's Budget presents personnel and financial resource projections through FY 2005.) The FYDP also identifies the numbers of units and quantities of equipment needed to support DoD programs. These projections extend seven years beyond the second year of each biennial budget. (Thus, the FYDP associated with the FY 2001 President's Budget contains unit and equipment estimates through FY 2008.)

The FYDP is a versatile tool for decision makers in that it is capable of portraying both the appropriations that support a given program and the programs that derive funding from a particular appropriation. DoD provides a FYDP report to Congress each year, as a supplement to the President's budget submission. The FYDP is updated, for internal DoD use, after the planning and programming phases of each annual planning, programming, and budgeting cycle. Thus, the FYDP provides information to DoD decision makers and their staffs at each stage of the Department's annual resource allocation process. In 1997, as part of the Defense Reform Initiative, the FYDP was reengineered with the latest information technology to support modern business practices throughout DoD headquarters.

### Planning, Programming, and Budgeting System

The Planning, Programming, and Budgeting System (PPBS) is the process employed by the Department of Defense to ensure that its strategic plan—the QDR—is implemented in its budget. Through the PPBS, the Department apportions resources annually in support of the corporate goals articulated in the QDR, consistent with the DoD vision statement presented earlier in this appendix.

Each year, the Department issues detailed planning guidance based upon the results of previous years' budget execution as well as on changes in defense policy. The Deputy Secretary of Defense supplements this programmatic guidance by providing fiscal guidance to each of the Services and defense agencies. The Services and defense agencies then use the planning and fiscal guidance to adjust their individual programs. The product of these adjustments is a Program Objective Memorandum (POM) prepared by each of the military departments and defense agencies, outlining the programs

they propose to pursue over the FYDP period to achieve the Department's goals. The Department evaluates the combined Service and agency POMs to ensure they properly implement the planning and fiscal guidance. Alternative approaches for implementing the guidance are defined and resolved through a process known as the Program Review. During the Program Review, the Department selects those alternatives most consistent with its corporate goals.

With this programmatic guidance in hand, the Services and defense agencies have a clear road map to use in preparing their Budget Estimate Submissions (BES). The BES funding profiles collectively reflect the financial strategy the Department will follow to achieve its corporate goals. The combined BES submissions are vetted through a Budget Review conducted by the staffs of the Department's Comptroller and the Office of Management and Budget. During the Budget Review, the Department's ability to accomplish its goals at the planned funding levels is carefully examined. Following the Budget Review, the Deputy Secretary approves either the estimates from the BES submissions or alternative estimates developed by the Comptroller. Taken together, these decisions constitute a financial blueprint for achieving the corporate goals derived from the Department's strategic plan. With the issuance of these decisions, the process of preparing the defense portion of the President's Budget is complete.

In sum, the PPBS process is an effective mechanism for the Department to match the national military strategy with the appropriate budgetary resources in a fiscally constrained environment. At every step of the way, senior leaders have visibility into those issues that could threaten the Department's ability to properly match means to ends as expressed in the QDR. The end result of PPBS execution is an annual budget that fully supports the Department's corporate goals.

### Cross-Cutting Functions

Throughout the United States' history, U.S. armed forces have been called upon to respond to a variety of national needs other than waging wars. Today, military forces may be used to support civil authorities in executing missions such as civil works, disaster relief, and domestic crises. In addition, the Department works with other agencies to ensure a coordinated response to the threats posed by terrorism, proliferation of weapons of mass destruction, and illegal drug trafficking. DoD plays a supporting role in these processes in accordance with applicable law and Presidential Decision Directives (PDDs).

In the area of emergency preparedness, the Federal Emergency Management Agency coordinates federal responses to civil disasters, such as storms, earthquakes, fires, and floods. The Federal Bureau of Investigation is the lead agency for managing emergency measures in response to acts of terrorism committed within the United States. The war on drugs is coordinated by the Director of the White House Office of National Drug Control Policy. Responsibility for protecting the nation's critical infrastructure, including those physical and information systems necessary to the efficient functioning of societal, commercial, and governmental institutions, is shared by several government agencies. Table I-6 provides more detail on the allocation of responsibilities among federal agencies in these respective areas.

### Contractor Assistance

The firm of Arthur Andersen, LLP, provided management consulting services in the development of this combined GPRA performance plan and report. Arthur Andersen assisted DoD offices in the following areas:

- Developing data maps to enhance accuracy and reproducibility.

- Educating offices that consolidate data on GPRA requirements and DoD GPRA practices.

- Advising on verification and validation methodologies.

- Introducing offices responsible for individual metrics to related commercial practices.

| Federal Interagency Responsibilities for Key National Security Issues | Table I-6 |
|---|---|
| Emergency Preparedness<br>(P.L. 93-288,<br>as amended)<br><br>Reference: Federal Response Plan | • Lead agency: FEMA<br>• Army Corps of Engineers – Public works and engineering<br>In addition, DoD provides support for functions carried out by the following agencies:<br>• USDA – Food and fire fighting (National Forest Service)<br>• FEMA – Information and planning; urban search and rescue<br>• DoE – Energy<br>• EPA – Hazardous materials<br>• American Red Cross – Mass care<br>• HHS – Health and medical care<br>• GSA – Resource support<br>• DoT – Transportation |
| Terrorism and Weapons of Mass Destruction<br>(PDD-39, PDD-62)<br><br>Reference: Terrorism Incident Annex to the Federal Response Plan | • Lead agency for threats in the United States: FBI<br>• FBI – Crisis management<br>• FEMA – Consequences management; maintains Rapid Response Information System database<br>• DoD – Provides technical operational capabilities to support responses to weapons of mass destruction threats<br>• DoE – Provides nuclear-incident response capabilities<br>• HHS – Coordinates health and medical responses<br>• EPA – Provides environmental responses, including coordination of the National Oil and Hazardous Substances Pollution Contingency Plan<br>• National Coordinator for Security, Infrastructure Protection, and Counterterrorism – Advises on related budget requests |
| Counternarcotics<br>(PDD 14; 10 USC Sec 124;<br>P.L. 105-150, Sec 1004,<br>as amended; 32 USC Sec 112) | • Lead agency: White House Office of National Drug Control Policy<br>• DoJ – Drug Enforcement Agency; Border Patrol<br>• DoD – Supports surveillance of high-intensity drug-trafficking areas; provides air reconnaissance, intelligence, and National Guard support<br>• DoEd – Sponsors drug prevention education<br>• HHS – Oversees substance abuse treatment and youth anti-drug and anti-alcohol programs<br>• DoS – Provides support for source-nation interdiction efforts |
| Critical Infrastructure<br>(PDD-63) | • National Coordinator for Security, Infrastructure Protection, and Counterterrorism chairs group coordinating efforts of the various lead agencies<br><br>**Lead agencies by sector:**<br>• Government – GSA<br>• Banking/Finance – Treasury<br>• Telecommunications – DoC/DoD<br>• Power generation/distribution – DoE<br>• Transportation – DoT<br>• Water service – EPA<br>• Emergency services – FEMA<br>• Public services – HHS<br>• R&D – OSTP<br><br>**Lead agencies by functional area:**<br>• Law enforcement – DoJ<br>• International cooperation – DoS<br>• Intelligence – DCI<br>• National defense – DoD |

NOTE: DCI = Director of Central Intelligence; DoC = Department of Commerce; DoE = Department of Energy; DoEd = Department of Education; DoJ = Department of Justice; DoS = Department of State; DoT = Department of Transportation; EPA = Environmental Protection Agency; FBI = Federal Bureau of Investigation; FEMA = Federal Emergency Management Agency; GSA = General Services Administration; HHS = Department of Health and Human Services; OSTP = White House Office of Science and Technology Policy; USDA = Department of Agriculture.

## The Importance of Human Resources

Previous sections of this appendix have stressed the critical importance of military personnel and DoD civilians in achieving the Department's performance goals. Because personnel issues have been presented within the context of individual goals and metrics, it is possible that significant overall aspects of DoD's human resource strategy may have been obscured. The following paragraphs therefore highlight important goals and objectives related to DoD's workforce and direct the reader to more detailed discussions found in various chapters of this annual report.

### ESTABLISHING MANNING LEVELS

DoD's military manning levels are set by statute and are based on the force structure determined by the QDR. Likewise, civilian manning requirements are structured to support the military force. The various business reforms the Department has undertaken seek to realize efficiencies, eliminate redundancies, and outsource functions where appropriate to reduce total DoD military and civilian manning. For more information on personnel reductions related to reform efforts, see Chapters 12, 13, and 14. Any savings attained through these changes are used to underwrite force modernization and transformation, as described in Chapter 11.

### MAINTAINING A QUALITY WORKFORCE

U.S. military forces are the best in the world primarily because of the quality of the nation's soldiers, sailors, airmen, and marines. To maintain a skilled and capable force, the Department must continue to compete successfully with private industry for new talent, and it must strive to retain key mid-career personnel. The robust national economy presents challenges in attracting and retaining high-quality people. Chapter 4 discusses the difficulties the Department faces in this regard and describes initiatives being pursued to ensure a properly sized and structured force. Chapter 10 examines challenges the Department has encountered in recruiting and retaining military personnel.

DoD's civilian employees provide essential support to combat forces. While continuing to downsize its civilian workforce, the Department is also stressing increased training and professional development among its civilian employees. Chapter 10 provides more details regarding civilian personnel management.

### MAINTAINING THE PROPER MIX OF SKILLS

Recruiting and retaining sufficient numbers of personnel is only part of the challenge: the military must also maintain a proper mix of key personnel skills. Shortages of pilots and other specialties, such as Navy surface warfare officers and Air Force crew chiefs, are cause for concern. These shortages are particularly acute within high-demand, high-tempo units. Thus, properly managing tempo remains essential to maintaining the Department's skill base. Chapter 10 provides an in-depth discussion of this and other force management concerns.

### TRAINING THE FORCE

A properly sized workforce equipped with the right mix of skills is the foundation for readiness; however, quality training is equally essential to generating combat power. As individual units execute their training programs, commanders challenge, prepare, and motivate the members of their units. Commanders are required to judge their units' performance against previously established training goals that support overall readiness objectives. These evaluations are summarized in classified unit-level readiness ratings reported in the GPRA annex to the *Quarterly Readiness Report to Congress*.

Training is also indispensable in areas of the Department that carry out business-like functions, such as financial and information management. In these areas, the reforms underlying the RBA require an ever more highly trained workforce. The success of acquisition reform, financial management reform, and information management reform will be determined in large part by the attainment of ambitious training objectives.

### IMPROVING QUALITY OF LIFE

A decent quality of life is essential to attracting personnel to the military, retaining them, and motivating them to maintain the highest levels of readiness. DoD quality-of-life programs are discussed in Chapter 10. During FY 1999, the Department took a number of steps to enhance service members' overall compensation, including a 4.8 percent pay raise and retirement reform. Making military life more predictable, reducing tempo, and supporting the families of deployed personnel are also top priorities in this area.

## INFORMATION TECHNOLOGY MANAGEMENT PERFORMANCE GOALS

The Clinger-Cohen Act of 1996 is being implemented throughout the Department of Defense. Section 5123 of the Clinger-Cohen Act requires that the Department establish goals for improving the efficiency and effectiveness of agency operations through the use of information technology (IT) and prepare an annual report, to be included in the budget submission to Congress, on the progress in achieving the goals. This is the Department's third Section 5123 annual report.

## DOD INFORMATION MANAGEMENT GOALS

The DoD Chief Information Officer (CIO) has published a DoD Information Management (IM) Strategic Plan. This plan focuses on information superiority achieved through global, affordable, and timely access to reliable and secure information for worldwide decision making and operations. To realize this vision, the Department has established the goals described in Table J.

Table J

## DOD INFORMATION MANAGEMENT GOALS

Goal 1 – Become a mission partner:

- Identify mission needs and align IT.
- Forge effective partnership relationships with customers.
- Move toward an information marketplace.

Goal 2 – Provide services that satisfy customer information needs:

- Build an infrastructure based on architectures and performance.
- Ensure DoD systems meet the Year 2000 (Y2K) challenge.
- Modernize and integrate the Defense Information Infrastructure, evolving it to the Global Information Grid.
- Introduce new paradigms.
- Improve IT management tools.

Goal 3 – Reform information technology management processes to increase efficiency and mission contribution:

- Institutionalize Clinger-Cohen Act provisions.
- Institute fundamental IT management reform efforts.
- Promote the development of an IT management knowledge-based workforce within DoD.
- Provide the IM/IT support required to ensure individuals with disabilities have equal access to the information environments and opportunities in DoD.

Goal 4 – Ensure DoD's vital information resources are secure and protected:

- Make Information Assurance (IA) an integral part of DoD mission readiness criteria.
- Enhance DoD personnel IA awareness and capabilities.
- Enhance DoD IA operational capabilities.
- Establish an integrated DoD security management infrastructure.

## DOD INFORMATION MANAGEMENT GOALS – ACCOMPLISHMENTS

### Goal 1 – Become a mission partner

A DoD CIO Executive Board has been established as the principal DoD forum to advise the Secretary and Deputy Secretary of Defense, through the DoD CIO, on the full range of matters pertaining to Subdivision E of the Clinger-Cohen Act; coordinate implementation of activities under Clinger-Cohen Act; exchange pertinent information and discuss issues regarding the Global Information Grid (GIG); and coordinate with the Intelligence Community CIO Executive Council on matters of mutual interest.

On July 25, 1997, the DoD CIO approved the Information Technology Investment Management Insight Policy for Acquisition. The policy simplifies and streamlines the way that DoD components inform the DoD CIO about their major information technology acquisitions. In 1999, the DoD CIO reviewed 12 such notifications.

### Goal 2 – Provide services that satisfy customer information needs

All DoD mission critical systems will be Y2K compliant by December 1999 as well over 99.9 percent of non-mission critical systems. In support of Y2K remediation, DoD conducted the largest IT operational evaluation and testing program in its history; developed systems and operational contingency plans; and formulated key policies on consequence management, configuration management, connection to the Internet, and community conversations.

A GIG concept was formulated to enable Full Spectrum Dominance for *Joint Vision 2010* and beyond. The GIG envisions a baseline capability integrating all DoD command, control, communications, computers, intelligence, surveillance, and reconnaissance requirements—strategic, operational, tactical, and base/post/camp/station/ship—providing flexible, assured bandwidth to warfighters regardless of environment. The GIG encompasses IT and National Security Systems as defined in Public Law 104-106.

The Defense Management Council approved the overall smart card adoption and implementation policy concept on September 24, 1999, and directed all DoD components to take actions necessary to implement the use of a standard DoD smart card. This card, which will become the Department's common access card, will embrace the functions of personnel identification (ID), physical security access, and computer network access. The common access card will be the standard ID card for military personnel (to include the Selected Reserve) and DoD civilian employees.

### Goal 3 – Reform information technology management processes to increase efficiency and mission contribution

The DoD CIO became a member of the Defense Acquisition Board, thus ensuring that the CIO position is heard on all acquisition deliberations.

Recent statutory requirements, including the Clinger-Cohen Act, mandated that DoD implement a process whereby IT investments were managed and evaluated based on specific, measurable contributions to DoD mission goals and priorities. To achieve this, the Department is developing the Portfolio Management and Oversight (PM&O) process. Under PM&O, investments will be grouped by mission capability to establish portfolios; trade-offs among investments will be made to the optimum benefit of the mission; and benefits will be measured and evaluated in the context of their contribution to the overall success of the mission.

The ongoing Enterprise Software Initiative (ESI) is a project that is saving money on DoD common-use, commercial-off-the-shelf software by creating DoD-wide Enterprise Software Agreements. ESI is realizing savings, from 28 percent to 98 percent off General Services Administration pricing, as a result of innovative process changes.

### Goal 4 – Ensure DoD's vital information resources are secure and protected

Through a Web security initiative, a higher level of scrutiny was applied to the type of information being posted to DoD Web sites.

Disparate computer forensics labs were integrated into the Defense Computer Forensics Laboratory, and a training facility was established to develop the skills needed in the future to investigate computer intrusions.

The Department formulated its policy on Public Key Infrastructure and established an office to guide the Department's efforts to dramatically improve the integrity and security of information processes.

In support of Critical Infrastructure (PDD-63) and DoD critical asset protection, the Department completed its portion of the National Plan for Information Systems Protection.

DoD established the Joint Counterintelligence Evaluation Office to ensure that the senior DoD leadership is informed, in a timely manner, of significant counter-intelligence investigative activity. Significant activity includes foreign intelligence threats to DoD critical technologies, information infrastructure, U.S. military operations, and personnel.

In response to increasing cyber attacks, DoD:

- Increased DoD awareness by establishing a 24-hour watch.

- Identified and patched systems at risk.

- Installed Intrusion Detection Systems on key nodes.

- Increased the number of Emergency Response Teams for triage and repair.

- Developed contingency plans for degradation/loss of network.

- Improved its ability to analyze data and assess attacks.

- Conducted red team exercises to improve operational readiness and continued improvements to the red team methodology.

## CONCLUSION

By aggressively pursuing a well-articulated set of DoD CIO priorities, DoD has:

- Addressed known Y2K deficiencies.

- Reoriented the DoD CIO Council from an information-gathering group to a decision making forum—the DoD CIO Executive Board.

- Established the Global Information Grid.

- Initiated the Portfolio Management and Oversight process.

With the accomplishment of these steps, the Department has achieved the intent of the Clinger-Cohen Act of 1996.

## JUSTIFICATIONS FOR FY 2000 DOD COMMITTEES SUBJECT TO THE FEDERAL ADVISORY COMMITTEE ACT*

| Committee Name | Committee Type | Justification | Projected Cost of Committee – FY 2000 |
|---|---|---|---|
| Advisory Council on Dependents' Education | Statutory | The Advisory Council on Dependents' Education is established under title XIV, section 1411, of Public Law 95-561, Defense Dependents' Education Act of 1978, as amended by title XII, section 1204(b)(3)-(5), of Public Law 99-145, Department of Defense Authorization Act of 1986 (20 U.S.C., chapter 25A, section 929, Advisory Council on Dependents' Education). | $157,000 |
| Advisory Group on Electron Devices | Discretionary | To assist DoD in planning, directing, and coordinating an effective and economical research and development program in electron device technology. These devices play a critical role in military systems in determining overall system performance, reliability, and life-cycle. | $546,000 |
| Air University Board of Visitors | Discretionary | To assist the Air University to sustain effective programs by obtaining advice and recommendations on performance of the educational mission from members of the education, professional, public affairs, industrial, and business communities. | $74,067 |
| American Heritage Rivers Initiative Advisory Committee | Presidential | Executive Order 13080 dated April 7, 1998. | $0 |
| Armament Retooling and Manufacturing Support Executive Advisory Committee | Discretionary | To provide oversight of the Armament Retooling and Manufacturing Support Program and a communications forum where a group of experts may advise the Secretary of the Army concerning the changing roles for Government-Owned, Contractor Operated Army ammunition plants. | $167,457 |
| Armed Forces Epidemiological Board | Discretionary | To advise the Assistant Secretary of Defense (Health Affairs) on operational programs, policy development, and research requirements and programs for the prevention of disease and injury and the promotion of health. Board recommendations are used to shape DoD and Service force protection policy. | $228,000 |
| Army Education Advisory Committee | Discretionary | To advise the Secretary of the Army on Army educational programs and educational matters of interest through five subcommittees concerned with the Command and General Staff College, the Reserve Officers Training Corps, the School of the Americas, the U.S. Army War College, and Distance Learning/Training Technology Applications. | $198,460 |
| Army Science Board | Discretionary | To advise the Secretary of the Army and the Chief of Staff of the Army and their staffs on scientific, technological, and acquisition matters of interest to the Department of the Army. | $1,089,440 |
| Ballistic Missile Defense Advisory Committee | Discretionary | To provide the Secretary of Defense with advice and insights into the ballistic missile defense program, and make recommendations on the acquisition and development of systems related to the program. | $101,000 |

## JUSTIFICATIONS FOR FY 2000 DOD COMMITTEES SUBJECT TO THE FEDERAL ADVISORY COMMITTEE ACT* (Continued)

| Committee Name | Committee Type | Justification | Projected Cost of Committee – FY 2000 |
|---|---|---|---|
| Board of Advisors to the President, Naval War College | Discretionary | To advise and assist the President, Naval War College, by examining and making recommendations regarding the educational, doctrinal, enrollment, and research policies and programs at the college. | $9,250 |
| Board of Advisors to the Superintendent, Naval Postgraduate School | Discretionary | To advise the Secretary of the Navy on Naval Graduate Educations Programs by reviewing curricula, instruction, physical plant and equipment, administration, state of the student body, fiscal affairs and resources, and other matters relating to the operation of school programs. | $39,000 |
| Board of Regents, Uniformed Services University of the Health Sciences | Statutory | P. L. 101-511 dated October 1, 1990. | $166,400 |
| Board of Visitors, Department of Defense Centers for Regional Security | Discretionary | To advise the Secretary of Defense on matters related to mission, policy, faculty, students, curricula, educational methods, research, facilities, and administration of the George C. Marshall European Center for Security Studies and the Asia-Pacific Center for Defense Studies. | $156,400 |
| Board of Visitors, Joint Military Intelligence College | Discretionary | To advise the Director, Defense Intelligence Agency, and the President, Joint Military Intelligence College, on matters related to mission, policy, accreditation, faculty, students, facilities, curricula, educational methods, research, and administration. | $25,300 |
| Board of Visitors, Marine Corps University | Statutory | 10 U.S.C. Sec 7102. | $51,710 |
| Board of Visitors, National Defense University | Discretionary | To provide the President, National Defense University, and Commandants of the National War College and the Industrial College of the Armed Forces with observations, reviews, and criticism of University and College programs, policies, research, and administration. | $9,000 |
| Chief of Engineers Environmental Advisory Board | Discretionary | To advise the Chief of Engineers on policy development and procedural recommendations for consideration within the Corps of Engineers. | $175,000 |
| Chief of Naval Operations Executive Panel | Discretionary | To provide advice to the Chief of Naval Operations related to the role of naval power in the international strategic environment; review current and proposed Navy policies to provide advice on enhancing the Navy's effectiveness in support of national security policy; and recommend alternative policies in the light of evolving political, economic, technological, military, and social circumstances. | $674,804 |
| Community College of the Air Force Board of Visitors | Discretionary | To advise the Commander, Air Education and Training Command, and the Community College of the Air Force administration on the development and maintenance of career-related associate degree programs which meet the needs of the Air Force. | $29,500 |

## JUSTIFICATIONS FOR FY 2000 DOD COMMITTEES SUBJECT TO THE FEDERAL ADVISORY COMMITTEE ACT* (Continued)

| Committee Name | Committee Type | Justification | Projected Cost of Committee – FY 2000 |
|---|---|---|---|
| Defense Acquisition University Board of Visitors | Statutory | 10 U.S.C. Sec 1746. | $32,200 |
| Defense Advisory Committee on Military Personnel Testing | Discretionary | To review the calibration of personnel selection and classification tests to ensure the accuracy of resulting scores; review relevant validation studies to ensure that the tests have utility in predicting success in technical training and on the job; review ongoing testing research and development in support of the enlistment program; and make recommendations for improvements to make the testing process more responsive to the needs of Department of Defense and the Services. | $82,147 |
| Defense Advisory Committee on Women in the Services | Discretionary | To provide the Secretary of Defense with advice and recommendations on matters and policies relating to women in the armed forces. | $683,561 |
| Defense Environmental Response Task Force II | Statutory | P. L. 102-380 dated October 15, 1992. | $889,174 |
| Defense Intelligence Agency Science and Technology Advisory Board | Discretionary | To advise the Director, Defense Intelligence Agency, on the impact of advanced science and technology on intelligence collection and production programs. | $160,947 |
| Defense Labor Management Partnership Council | Presidential | Executive Orders 12871 dated October 1, 1993; 12983 dated December 21, 1995; 13062 dated September 29, 1997. | $38,775 |
| Defense Policy Advisory Committee on Trade | Discretionary | To provide general defense policy advice to the United States Trade Representative in conjunction with the Secretary of Defense concerning trade matters referred to in 19 U.S.C. Sec 2155. | $2,600 |
| Defense Policy Board Advisory Committee | Discretionary | To provide the Secretary of Defense, Deputy Secretary, and Under Secretary for Policy with independent, informed advice and opinion concerning major matters of defense policy. | $190,000 |
| Defense Science Board | Discretionary | Make recommendations to the Under Secretary of Defense (Acquisition and Technology) and the Secretary of Defense on issues in areas relating to scientific, technical, and manufacturing matters of special interest to DoD. | $2,542,541 |
| Department of Defense Domestic Advisory Panel on Early Intervention and Education for Infants, Toddlers, and Preschool Children and Children with Disabilities | Statutory | 20 U.S.C. Sec 1413. | $18,700 |

## JUSTIFICATIONS FOR FY 2000 DOD COMMITTEES SUBJECT TO THE FEDERAL ADVISORY COMMITTEE ACT* (Continued)

| Committee Name | Committee Type | Justification | Projected Cost of Committee – FY 2000 |
|---|---|---|---|
| Department of Defense Education Benefits Board of Actuaries | Statutory | 10 U.S.C. Sec 2006. | $47,000 |
| Department of Defense Government-Industry Advisory Committee on the Operation and Modernization of the National Stockpile | Statutory | 50 U.S.C. 98h-1(a). | $0 (nonoperational) |
| Department of Defense Historical Advisory Committee | Discretionary | To provide advice to the Secretary of Defense and the Secretaries of the military departments regarding the professional standards, historical methodology, program priorities, liaison with professional groups and institutions, and adequacy of resources connected with the various historical programs and associated activities of the Department of Defense. | $137,500 |
| Department of Defense Retirement Board of Actuaries | Statutory | 10 U.S.C. 1464. | $27,000 |
| Department of Defense Wage Committee | Discretionary | To make recommendations regarding wage surveys and wage schedules for blue-collar employees to the Department of Defense Wage Fixing Authority to discharge the responsibility assigned by P. L. 92-392 and the Office of Personnel Management. DoD has lead agency responsibility for setting wage rates in all 258 wage areas established under the Federal Wage System. | $43,760 |
| DoD Healthcare Quality Initiatives Review Panel | Statutory | P.L. 105-174, dated May 1, 1998. | $66,451 |
| Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction Advisory Panel | Statutory | P. L. 105-261, Section 1405. | $700,000 |
| Inland Waterways Users Board | Statutory | 33 U.S.C. 2251. | $235,000 |
| Joint Advisory Council on Nuclear Weapons Surety | Discretionary | To advise the Secretary of Defense and the Department of Energy and inform the Joint Nuclear Weapons Council on nuclear weapons systems surety matters. | $121,000 |
| National Security Agency/ Central Security Service (NSA/CSS) Scientific Advisory Board | Discretionary | To advise the Director, NSA, Chief, CSS, and senior agency management on matters involving science, technology, signals intelligence production, information security, procedures, and management related to the mission of the NSA/CSS. | $305,000 |

## JUSTIFICATIONS FOR FY 2000 DOD COMMITTEES SUBJECT TO THE FEDERAL ADVISORY COMMITTEE ACT* (Continued)

| Committee Name | Committee Type | Justification | Projected Cost of Committee – FY 2000 |
|---|---|---|---|
| National Security Education Board | Statutory | P. L. 102-183, dated December 4, 1991. | $74,200 |
| Naval Research Advisory Committee | Discretionary | To maintain an understanding of the technological needs confronting the Navy and Marine Corps, keep abreast of the research and development which is being carried on to address them, and offer a judgment to the Navy and Marine Corps as to whether these efforts are adequate. | $819,781 |
| Navy Planning and Steering Advisory Committee | Discretionary | To provide objective advice and recommendations to the Secretary of the Navy and the Chief of Naval Operations on matters relating to submarine launched ballistic missile security and anti-submarine warfare. | $14,800 |
| Ocean Research Advisory Panel | Statutory | 10 U.S.C. Sec 7903 as amended by P. L. 105-85 dated November 18, 1997. | $64,000 |
| Overseas Dependent Schools National Advisory Panel on the Education of Dependents with Disabilities | Statutory | 20 U.S.C. 1413, as amended dated October 1, 1990. | $45,650 |
| President's Information Technology Advisory Committee | Presidential | Executive Order 13035 dated February 11, 1997, and amended July 24, 1998, and February 17, 1999. | $568,500 |
| President's National Security Telecommunications Advisory Committee | Presidential | Executive Order 12382 dated September 13, 1982; Executive Order 13062 dated September 29, 1997. | $2,435,900 |
| President's Security Policy Advisory Board | Presidential | Presidential Decision Directive NSC dated September 16, 1994. | $41,700 |
| Scientific Advisory Board of the Armed Forces Institute of Pathology | Discretionary | To serve in the public interest as a scientific advisory board to the Director, Armed Forces Institute of Pathology (AFIP) and provide his or her staff with scientific and professional advice and guidance in matters pertaining to operational programs, policies, and procedures of AFIP and the central laboratory of pathology for DoD and other federal agencies with responsibilities for consultation, education, and research in pathology. | $92,472 |
| Special Oversight Board for DoD Investigations of Gulf War Chemical and Biological Incidents | Presidential | Executive Order 13075 dated February 19, 1998. | $737,000 |
| Strategic Advisory Group for the U. S. Strategic Command | Discretionary | To provide timely advice on scientific, technical, and policy related issues to Commander in Chief, United States Strategic Command, during the development of the nation's strategic war plans. | $405,524 |

## JUSTIFICATIONS FOR FY 2000 DOD COMMITTEES SUBJECT TO THE FEDERAL ADVISORY COMMITTEE ACT* (Continued)

| Committee Name | Committee Type | Justification | Projected Cost of Committee -- FY 2000 |
|---|---|---|---|
| Telecommunications Service Priority System Oversight Committee | Discretionary | To provide advice and recommendations to the Secretary of Defense regarding the priority treatment of national security and emergency preparedness telecommunications services. | $42,250 |
| Threat Reduction Advisory Committee | Discretionary | To provide advice and assistance to the Under Secretary of Defense (Acquisition and Technology) with respect to technology security, counterproliferation, chemical and biological defense, sustainment of the nuclear weapons stockpile, and other matters related to the Defense Threat Reduction Agency mission. | $325,000 |
| Semiconductor Technology Council | Statutory | P. L. 103-160. | $3,240 |
| Strategic Environmental Research and Development Program Scientific Advisory Board | Statutory | 10 U.S.C. 2904. | $323,524 |
| U. S. Commission on National Security/21st Century | Discretionary | To investigate the wide range of security challenges facing the United States in the early 21st century and lend expert advice and direction to the National Security Study Group. | $2,168,500 |
| United States Air Force Academy Board of Visitors | Statutory | 10 U.S.C. 9355. | $15,955 |
| United States Air Force Scientific Advisory Board | Discretionary | To provide independent wisdom and insight to Air Force senior leaders on science and technology for continued air and space dominance. | $1,500,000 |
| United States Army Coastal Engineering Research Board | Statutory | 33 U.S.C. 462-2 and P. L. 88-172 dated November 11, 1963. | $333,000 |
| United States Military Academy Board of Visitors | Statutory | 10 U.S.C. 4355. | $64,000 |
| United States Naval Academy Board of Visitors | Statutory | 10 U.S.C. 6968. | $5,000 |
| TOTAL PROJECTED FY 2000 COSTS | | | $20,301,140 |

* This is a requirement of Public Law 105-85, Section 904, dated Nov. 18, 1997. Committees must be justified and fiscal years costs projected. All committees must be identified as discretionary (proposed by the Secretary), statutory (required by statute) or Presidential (directed by the President).

## RESOURCES ALLOCATED TO MISSION AND SUPPORT ACTIVITIES

Section 915 of the National Defense Authorization Act for Fiscal Year 1999 (Public Law 105-261) requires the Department of Defense (DoD) to identify resources allocated to mission and support activities in each of the five preceding fiscal years. In response to that requirement, Appendix L provides year-by-year comparisons of:

- DoD funding (in constant dollars) allocated to mission and infrastructure (or support) programs (Table L-1).

- DoD manpower allocated to mission and infrastructure (or support) programs (Tables L-2 through L-7).

- DoD manpower in management headquarters and headquarters support activities, compared to active-duty military end-strength (Table L-8).

Data for the reporting period (FY 1996-2001) have been normalized for definitional or accounting changes. The principal adjustments were required by Army and Air Force reclassifications that moved significant resources from infrastructure to mission categories.

## DEFINITIONS

In tracking annual resource allocations, this appendix uses definitions of mission and infrastructure adopted by the Department for the 1993 Bottom-Up Review and employed subsequently in the 1997 Quadrennial Defense Review. (In this context, the term infrastructure is synonymous with support.) The definitions support macro-level comparisons of DoD resources, such as those presented here. They are based on the DoD Future Years Defense Program (FYDP) and on a 1991 Institute for Defense Analyses publication, *A Reference Manual for Defense Mission Categories, Infrastructure Categories, and Program Elements*, prepared for the Office of the Secretary of Defense.

The definitions apply to a group of mission and infrastructure categories, where each FYDP program element is assigned to a unique category. The specific categories used in the definitions are as follows.

### Mission Categories

- Combat Forces. Programs associated with military combat units, such as heavy divisions, tactical aircraft squadrons, and aircraft carriers.

- Direct Support Forces. Programs associated with support units that deploy with combat forces, such as corps-level support, tanker aircraft squadrons, and naval replenishment ships.

- Other Forces. Includes most intelligence, space, and combat-related command, control, and communications ($C^3$) programs, such as cryptologic activities, satellite communications, and airborne command posts.

### Infrastructure Categories

- Science and Technology. Consists of basic research, exploratory development, and advanced development programs.

- Acquisition Infrastructure. Consists of program offices and similar acquisition organizations as well as the test and evaluation infrastructure.

- Installation Support. Consists of base operations and real property maintenance activities that support installations from which military forces operate. Also includes environmental programs and family housing activities. Base operations or real property maintenance that supports an infrastructure function (such as logistics) is included with that infrastructure category, and is therefore not addressed under installation support.

- Central $C^3$ Infrastructure. Programs that manage $C^3$ assets or that provide centrally-managed $C^3$ services, such as base-level communications.

- Force Management. Programs that provide DoD-wide administrative functions. Includes management and operational headquarters activities directly related to military forces.

- Central Logistics. Consists of material management, depot maintenance, transportation, and logistics-related support functions (such as logistics management headquarters and installation support). Logistics functions that are part of combat or direct support forces are considered within the

respective mission categories (as opposed to the infrastructure category).

- Central Medical. Programs that provide medical care to active-duty military personnel, dependents, and retirees.

- Central Personnel Support. Includes dependent support activities, acquisition of new DoD personnel, personnel transient and holding accounts, and miscellaneous personnel-related support functions, such as recruiting.

- Central Training. Comprises programs that provide central (or non-unit) training to defense personnel. Includes command-managed training, training of new personnel, officer training and academies, aviation and flight training, and military professional and skill training. Also includes miscellaneous other training-related support functions.

- Resource Adjustments. Consists of minor centrally-managed accounts, such as foreign currency fluctuations.

**Table L-1**

**DoD TOA by Mission and Infrastructure (Support) Category (FY 2001 $ in Billions)**

| | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 | FY 2001 |
|---|---|---|---|---|---|---|
| **Mission** | | | | | | |
| Combat Forces | | | | | | |
| Direct Support Forces | | | | | | |
| Other Forces | | | | | | |
| **Mission Total** | | | | | | |
| **Infrastructure** | | | | | | |
| Science and Technology Programs | | | | | | |
| Acquisition | | | | | | |
| Installation Support | | | | | | |
| Central C$^3$ | | | | | | |
| Force Management | | | | | | |
| Central (Wholesale) Logistics | | | | | | |
| Central Medical | | | | | | |
| Central Personnel Support | | | | | | |
| Central (Non-Unit) Training | | | | | | |
| Resource Adjustments[a] | | | | | | |
| **Infrastructure Total** | | | | | | |
| **Grand Total** | | | | | | |
| **Infrastructure as a Percentage of Total** | | | | | | |

Final figures were not available as of this report's publication date. Appendix L, in its entirety, will be provided to Congress under separate cover as soon as it is available.

SOURCE: FY 2001 President's Budget and associated FYDP with Institute for Defense Analyses normalization adjustments.

NOTE: TOA = total obligational authority.

[a] Reflects combined adjustments to TOA data to account for annual variations in military manpower levels and foreign currency exchange rates (relative to programmed or forecast amounts). Negative entries indicate costs associated with overages in active-duty end-strength at the end of a fiscal year relative to programmed manning and/or increased purchasing power of the dollar versus foreign currencies.

| | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 | FY 2001 |
|---|---|---|---|---|---|---|
| **DoD Active-Duty Military and Civilian Manpower by Mission and Infrastructure (Support) Category (in Thousands)** — Table L-2 | | | | | | |
| **Mission** | | | | | | |
| Combat Forces | | | | | | |
| Direct Support Forces | | | | | | |
| Other Forces | | | | | | |
| **Mission Total** | | | | | | |
| **Infrastructure** | | | | | | |
| Science and Technology Programs | | | | | | |
| Acquisition | | | | | | |
| Installation Support | | | | | | |
| Central C$^3$ | | | | | | |
| Force Management | | | | | | |
| Central (Wholesale) Logistics | | | | | | |
| Central Medical | | | | | | |
| Central Personnel Support | | | | | | |
| Central (Non-Unit) Training | | | | | | |
| Resource Adjustments[a] | | | | | | |
| **Infrastructure Total** | | | | | | |
| **Grand Total** | | | | | | |
| **Infrastructure as a Percentage of Total** | | | | | | |

*Final figures were not available as of this report's publication date. Appendix L, in its entirety, will be provided to Congress under separate cover as soon as it is available.*

SOURCE: FY 2001 President's Budget and associated FYDP with Institute for Defense Analyses normalization adjustments.

[a] Reflects adjustments to annual manpower data to account for differences between actual and programmed active-duty end-strength. Negative entries indicate overages in manpower levels at the end of a fiscal year relative to programmed amounts.

| Table L-3 Army Active-Duty Military and Civilian Manpower by Mission and Infrastructure (Support) Category (in Thousands) | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 | FY 2001 |
|---|---|---|---|---|---|---|
| **Mission** | | | | | | |
| Combat Forces | | | | | | |
| Direct Support Forces | | | | | | |
| Other Forces | | | | | | |
| **Mission Total** | | | | | | |
| **Infrastructure** | | | | | | |
| Science and Technology Programs | | | | | | |
| Acquisition | | | | | | |
| Installation Support | | | | | | |
| Central $C^3$ | | | | | | |
| Force Management | | | | | | |
| Central (Wholesale) Logistics | | | | | | |
| Central Medical | | | | | | |
| Central Personnel Support | | | | | | |
| Central (Non-Unit) Training | | | | | | |
| Resource Adjustments[a] | | | | | | |
| **Infrastructure Total** | | | | | | |
| **Grand Total** | | | | | | |
| **Infrastructure as a Percentage of Total** | | | | | | |

Final figures were not available as of this report's publication date. Appendix L, in its entirety, will be provided to Congress under separate cover as soon as it is available.

SOURCE: FY 2001 President's Budget and associated FYDP with Institute for Defense Analyses normalization adjustments.

[a] Reflects adjustments to annual manpower data to account for differences between actual and programmed active-duty end-strength. Negative entries indicate overages in manpower levels at the end of a fiscal year relative to programmed amounts.

| Table L-4 Navy Active-Duty Military and Civilian Manpower by Mission and Infrastructure (Support) Category (in Thousands) | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 | FY 2001 |
|---|---|---|---|---|---|---|
| **Mission** | | | | | | |
| Combat Forces | | | | | | |
| Direct Support Forces | | | | | | |
| Other Forces | | | | | | |
| **Mission Total** | | | | | | |
| **Infrastructure**[a] | | | | | | |
| Science and Technology Programs | | | | | | |
| Acquisition | | | | | | |
| Installation Support | | | | | | |
| Central C$^3$ | | | | | | |
| Force Management | | | | | | |
| Central (Wholesale) Logistics | | | | | | |
| Central Medical | | | | | | |
| Central Personnel Support | | | | | | |
| Central (Non-Unit) Training | | | | | | |
| Resource Adjustments[b] | | | | | | |
| **Infrastructure Total** | | | | | | |
| **Grand Total** | | | | | | |
| **Infrastructure as a Percentage of Total** | | | | | | |

Final figures were not available as of this report's publication date. Appendix L, in its entirety, will be provided to Congress under separate cover as soon as it is available.

SOURCE: FY 2001 President's Budget and associated FYDP with Institute for Defense Analyses normalization adjustments.

[a] The Science and Technology Programs and Central Medical categories include all Marine Corps manpower assigned to those two categories. The remaining infrastructure categories may include some Marine Corps resources that are funded in Navy programs.

[b] Reflects adjustments to annual manpower data to account for differences between actual and programmed active-duty end-strength. Negative entries indicate overages in manpower levels at the end of a fiscal year relative to programmed amounts.

| | | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 | FY 2001 |
|---|---|---|---|---|---|---|---|
| **Air Force Active-Duty Military and Civilian Manpower by Mission and Infrastructure (Support) Category (in Thousands)** | | | | | | | **Table L-5** |
| **Mission** | | | | | | | |
| | Combat Forces | | | | | | |
| | Direct Support Forces | | | | | | |
| | Other Forces | | | | | | |
| | **Mission Total** | | | | | | |
| **Infrastructure** | | | | | | | |
| | Science and Technology Programs | | | | | | |
| | Acquisition | | | | | | |
| | Installation Support | | Final figures were not available as of this report's publication date. Appendix L, in its entirety, will be provided to Congress under separate cover as soon as it is available. | | | | |
| | Central C$^3$ | | | | | | |
| | Force Management | | | | | | |
| | Central (Wholesale) Logistics | | | | | | |
| | Central Medical | | | | | | |
| | Central Personnel Support | | | | | | |
| | Central (Non-Unit) Training | | | | | | |
| | Resource Adjustments[a] | | | | | | |
| | **Infrastructure Total** | | | | | | |
| **Grand Total** | | | | | | | |
| **Infrastructure as a Percentage of Total** | | | | | | | |

SOURCE: FY 2001 President's Budget and associated FYDP with Institute for Defense Analyses normalization adjustments.

[a] Reflects adjustments to annual manpower data to account for differences between actual and programmed active-duty end-strength. Negative entries indicate overages in manpower levels at the end of a fiscal year relative to programmed amounts.

| | | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 | FY 2001 |
|---|---|---|---|---|---|---|---|
| **Table L-6** | | | | | | | |
| **Marine Corps Active-Duty Military and Civilian Manpower by Mission and Infrastructure (Support) Category (in Thousands)** | | | | | | | |
| **Mission** | | | | | | | |
| Combat Forces | | | | | | | |
| Direct Support Forces | | | | | | | |
| Other Forces | | | | | | | |
| **Mission Total** | | | | | | | |
| **Infrastructure**[a] | | | | | | | |
| Acquisition | | | | | | | |
| Installation Support | | Final figures were not available as of this report's publication date. Appendix L, in its entirety, will be provided to Congress under separate cover as soon as it is available. | | | | | |
| Central $C^3$ | | | | | | | |
| Force Management | | | | | | | |
| Central (Wholesale) Logistics | | | | | | | |
| Central Personnel Support | | | | | | | |
| Central (Non-Unit) Training | | | | | | | |
| Resource Adjustments[b] | | | | | | | |
| **Infrastructure Total** | | | | | | | |
| **Grand Total** | | | | | | | |
| **Infrastructure as a Percentage of Total** | | | | | | | |

SOURCE: FY 2001 President's Budget and associated FYDP with Institute for Defense Analyses normalization adjustments.

[a] The Science and Technology Programs and Central Medical categories are excluded from this table because these Marine Corps programs are centrally funded by the Department of the Navy. Marine manning levels for these two categories are included in Table L-4.

[b] Reflects adjustments to annual manpower data to account for differences between actual and programmed active-duty end-strength. Negative entries indicate overages in manpower levels at the end of a fiscal year relative to programmed amounts.

Table L-7

## Defense Agency and Defense-Wide Active-Duty Military and Civilian Manpower by Mission and Infrastructure (Support) Category (in Thousands)

| | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 | FY 2001 |
|---|---|---|---|---|---|---|
| **Mission** | | | | | | |
| Combat Forces | | | | | | |
| Direct Support Forces | | | | | | |
| Other Forces | | | | | | |
| **Mission Total** | | | | | | |
| **Infrastructure** | | | | | | |
| Science and Technology Programs | | | | | | |
| Acquisition | | | | | | |
| Installation Support | | Final figures were not available as of this report's | | | | |
| Central C$^3$ | | publication date. Appendix L, in its entirety, | | | | |
| Force Management | | will be provided to Congress under separate | | | | |
| Central (Wholesale) Logistics | | cover as soon as it is available. | | | | |
| Central Medical | | | | | | |
| Central Personnel Support | | | | | | |
| Central (Non-Unit) Training | | | | | | |
| Resource Adjustments$^a$ | | | | | | |
| **Infrastructure Total** | | | | | | |
| **Grand Total** | | | | | | |
| **Infrastructure as a Percentage of Total** | | | | | | |

SOURCE: FY 2001 President's Budget and associated FYDP with Institute for Defense Analyses normalization adjustments.

$^a$ Reflects adjustments to annual manpower data to account for differences between actual and programmed active-duty end-strength. Negative entries indicate overages in manpower levels at the end of a fiscal year relative to programmed amounts.

Table L-8

## Headquarters and Headquarters Support Manpower Compared to Active-Duty End-Strength (in Thousands)

| | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 | FY 2001 |
|---|---|---|---|---|---|---|
| Management Headquarters and Support Activities | | Final figures were not available as of this report's | | | | |
| Active-Duty Military End-Strength | | publication date. Appendix L, in its entirety, | | | | |
| Headquarters Manning as a Percentage of Military End-Strength | | will be provided to Congress under separate cover as soon as it is available. | | | | |

SOURCE: FY 2001 President's Budget and associated FYDP with Institute for Defense Analyses normalization adjustments.

## FOREIGN MILITARY ASSISTANCE

Foreign military assistance is an integral part of the United States peacetime engagement strategy and directly contributes to American national security and foreign policy objectives. The principal components of the program are Foreign Military Sales (FMS), Foreign Military Financing (FMF), International Military Education and Training (IMET), and transfers of Excess Defense Articles (EDA). Drawdowns of defense assets, directed by the President in response to urgent requirements, are also administered under the auspices of the foreign military assistance program. All components of the foreign military assistance program enable friends and allies to acquire U.S. equipment, services, and training for legitimate self-defense and for participation in multinational security efforts.

Ongoing foreign military assistance efforts support the primary foreign policy goals of safeguarding American security, building American prosperity, and promoting American values. By enhancing the capabilities of U.S. friends and allies to address conflicts, humanitarian crises, and natural disasters, it is less likely that American forces will be called upon to respond to regional problems. Strengthening deterrence, encouraging defense responsibility sharing among allies and friends, supporting U.S. readiness, and increasing interoperability between potential coalition partners through the transfer of defense equipment and training help security partners defend against aggression and strengthen their ability to fight alongside U.S. forces in coalition efforts. Therefore, when American involvement becomes necessary, these programs help to ensure that foreign militaries can work more efficiently and effectively with ours rather than be hobbled by mismatched equipment, communications, and doctrine.

Foreign military assistance, particularly the IMET program, helps to promote the principles of democracy, respect for human rights, and the rule of law. In addition to making the world a safer place, the spread of democratic principles contributes to a political environment more conducive to the global economic development so critical to the nation's well-being. Thus, there is a genuine linkage between foreign military assistance programs and the day-to-day lives of Americans.

### FOREIGN MILITARY SALES

The FMS program is the government-to-government method for selling U.S. defense equipment, services, and training. Sales in FY 1999 were approximately $12.2 billion. Responsible arms sales further national security and foreign policy objectives by strengthening bilateral defense relations, supporting coalition building, and enhancing interoperability between U.S. forces and militaries of friends and allies. These sales also contribute to American prosperity by improving the U.S. balance of trade position, sustaining highly skilled jobs in the defense industrial base, and extending production lines and lowering unit costs for such key weapon systems as the M1A2 tank, F-16 aircraft, AH-64 helicopter, and F/A-18 aircraft.

The Department of Defense has launched a major effort to reform the current foreign military sales system and to ensure that this valuable program remains viable into the next millennium. This reform effort will focus on improving the FMS system's performance and adopting better business practices wherever possible.

### FOREIGN MILITARY FINANCING

The principal means of ensuring America's security is through the deterrence of potential aggressors who would threaten the United States or its allies. Foreign Military Financing, the U.S. government program for financing through grants or loans the acquisition of U.S. military articles, services, and training, supports U.S. regional stability goals and enables friends and allies to improve their defense capabilities. Congress appropriates FMF funds in the International Affairs budget; the Department of State allocates the funds for eligible allies and friends; and the Department of Defense executes the program. As FMF helps countries meet their legitimate defense needs, it also promotes U.S. national security interests by strengthening coalitions with allies and friends, cementing cooperative bilateral military relationships, and enhancing interoperability with U.S. forces. Because FMF monies are used to purchase U.S. military equipment and training, FMF contributes to a strong U.S. defense industrial base, which benefits both America's armed forces and American workers.

FMF grants in FY 2000 total $3.43 billion, with the vast majority of funds earmarked to support the Middle East Peace Process. FMF is also being used to facilitate integration of Poland, Hungary, and the Czech Republic into NATO and to continue support of the Partnership for Peace (PfP) program. Specifically, PfP participating countries receive funding under the Warsaw Initiative to

help them enhance their interoperability with NATO, improve their compatibility with and understanding of NATO practices and terminology, and participate in PfP exercises. It is also being used to sustain small defense and maritime forces promoting peace and security in the Caribbean island nations, to support worldwide demining, and to bolster the capabilities of African nations to respond to limited peace and humanitarian missions on the continent.

## INTERNATIONAL MILITARY EDUCATION AND TRAINING

The IMET program is perhaps the most cost-effective ($50 million in FY 1999) foreign military assistance program. Last year, it supported grant military education and training for more than 8,000 foreign military and civilian defense personnel. Indeed, over half a million foreign personnel have been trained through IMET sponsorship over the past three decades. By attending courses and programs in the United States, future leaders of foreign defense and defense-related establishments are exposed to U.S. values, including respect for human rights, democratic institutions, and the role of a professional military under civilian control. Since 1991, the IMET program has expanded to nearly 30 new countries, primarily in Central Europe and the New Independent States of the former Soviet Union.

The IMET program fosters military-to-military relations and promotes military professionalism, both of which are key to the ability to conduct combined operations quickly and effectively and to enhance the self-defense capabilities of U.S. friends and allies. The regional commanders in chief rely on IMET as a key part of their engagement plans. IMET also trains small-unit and field commanders in the conduct of operations that are both effective and respectful of the rights of combatants and non-combatants. IMET courses fall into three categories: 50 percent Professional Military Education (e.g., Command and General Staff College); 30 percent Expanded IMET (e.g., Civil-Military Relations); and 20 percent technical training (e.g., aircraft engine repair).

Under Expanded IMET (E-IMET), international military and civilian students increase their ability to absorb and maintain basic democratic values by addressing issues of military justice, respect for internationally recognized human rights, effective management of defense resources, and improved civil-military relations. E-IMET is a major component of the U.S. engagement strategy in such places as Central America, Africa, and the New Independent States.

The IMET program remains one of DoD's highest priority foreign military assistance programs, and its effective implementation is one of the U.S. military departments' most important international missions. It is one of the least costly and most effective programs for maintaining U.S. influence and assisting countries in their transitions to functioning democracies.

| Military Assistance Programs | | | | | | Table M |
|---|---|---|---|---|---|---|
| Program | FY 1995 | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 2000 |
| FMS ($B) | 9.10 | 10.50 | 8.80 | 8.60 | 12.2[a] | 9.0[b] |
| FMF Grants ($B) | 3.15 | 3.28[c] | 3.22 | 3.30 | 3.4 | 3.43[b] |
| FMF Loans ($M) | 558 | 544 | 297.5 | 100 | 0 | 0 |
| IMET ($M) | 25.5[d] | 39 | 43.46 | 50[b] | 50 | 50 |
| EDA Grants ($M)[e] | 308 | 615 | 341 | 273 | 350 | f |
| EDA Sales ($M)[e] | 196 | 270 | 69 | 160 | 669 | f |

[a] Sales as of November 8, 1999.

[b] Estimated.

[c] FMF grant for FY 1996 includes $7 million supplemental funding.

[d] IMET for FY 1995 includes $850,000 transferred from Voluntary Peacekeeping Account.

[e] EDA figures reflect current value at time of notification.

[f] EDA transfers are not projected for future years.

## DRAWDOWN AUTHORITIES

Under Section 506 of the Foreign Assistance Act, the President can draw down defense articles from DoD inventories and provide defense services and military education and training to foreign governments and international organizations, on a grant basis. This authority is used primarily in response to military emergencies or to provide assistance for international narcotics control, international disaster relief, and refugee assistance. In 1999, drawdowns totaling $198 million were authorized in support of such efforts as disaster relief for Central American nations affected by Hurricane Mitch, peacekeeping in Kosovo, multinational force operations in East Timor, assistance to Jordan's efforts implementing peace plans in the Middle East, and counternarcotics efforts in Latin America.

## EXCESS DEFENSE ARTICLES

Excess Defense Articles are the defense materiel, other than construction equipment, in excess of Approved Force Acquisition Objectives and Approved Force Retention Stock levels at the time such articles are dropped from the DoD inventory. EDA articles may be sold to eligible countries and international organizations under the FMS program, or transferred on a grant basis under Section 516 of the Foreign Assistance Act. EDA transfers enable the United States to meet its foreign policy goals by helping allies and friends improve their defense capabilities and, at the same time, benefit the military departments by relieving them of the costs resulting from the demilitarization and disposal of excess equipment. In FY 1999, EDA transfers totaling $1.019 billion (the current value of the equipment) were approved. Greece, Turkey, Australia, Taiwan, and Jordan were the largest recipients of EDA offers consisting of such items as ships, aircraft, and air defense systems.

## PEACEKEEPING

The number of situations requiring peacekeeping operations has risen dramatically in the past few years. Various elements of foreign military assistance can provide support to peacekeeping operations in a variety of ways. Military equipment and services, including training, may be provided to individual countries or international organizations participating in selected regional peacekeeping operations through security assistance sale and lease programs or grant authorities. During FY 1999, military equipment and services were provided to nations contributing to peacekeeping efforts in Bosnia, Kosovo, and East Timor. The United Nations has also obtained a variety of military and support equipment on reimbursable lease and purchase agreements in support of peacekeeping programs in these troubled regions.

## CONCLUSION

Changes in the international security environment will continue to provide challenges for the foreign military assistance program. In many regards, the foreign military assistance mission has grown in scope and complexity with the expanded involvement of DoD in regional policy issues and coalition defense and with the growth of high visibility, nontraditional military assistance efforts in support of peacekeeping and demining. An effective foreign military assistance program, supporting U.S. national security interests and foreign policy objectives, remains a key part of U.S. security strategy. These programs work directly for the U.S. taxpayer, producing national security and economic benefits that far exceed the money spent, are important to the foreign policy agenda, and represent good investments in a future international environment friendly to American interests.

# GLOSSARY

| | | | |
|---|---|---|---|
| AAAV | Advanced Amphibious Assault Vehicle | ASW | Antisubmarine Warfare |
| AAMMP | Active Army Military Management Program | ATACMS | Army Tactical Missile System |
| AAN | Army After Next | ATARS | Advanced Tactical Airborne Reconnaissance System |
| ABL | Airborne Laser | ATSD-CS | Assistant to the Secretary of Defense for Civil Support |
| AC | Active Component | AVIP | Anthrax Vaccine Immunization Program |
| AC2ISRC | Aerospace Command and Control, Intelligence, Surveillance and Reconnaissance Center | AWACS | Airborne Warning and Control System |
| | | BASOPS | Base Operations |
| ACS | Agile Combat Support | BES | Budget Estimate Submission |
| ACSC | Armaments Cooperation Steering Committee | BRAC | Base Realignment and Closure |
| | | $C^2$ | Command and Control |
| ACTD | Advanced Concept Technology Demonstration | $C^3$ | Command, Control, and Communications |
| AEF | Aerospace Expeditionary Force | $C^4I$ | Command, Control, Communications, Computers, and Intelligence |
| AFB | Air Force Base | $C^4ISR$ | Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance |
| AFIP | Armed Forces Institute of Pathology | | |
| AFQT | Armed Forces Qualification Test | | |
| AFRIS | Air Force Recruiting Information System | CAIV | Cost as an Independent Variable |
| AFSCN | Air Force Satellite Control Network | CBIRF | Chemical/Biological Incident Response Force |
| AIP | Antisurface Warfare Improvement Program | CBO | Congressional Budget Office |
| ALI | Aegis Leap Intercept | CCR | Central Contractor Registration |
| AMEC | Arctic Military Environmental Cooperation | CDC | Centers for Disease Control and Prevention |
| AMRAAM | Advanced Medium-Range Air-to-Air Missile | CEC | Cooperative Engagement Capability |
| | | CFC | Combined Forces Command |
| ANG | Air National Guard | CFO | Chief Financial Officer |
| AOC | Air Operations Center | CIAO | Chief Infrastructure Assurance Officer |
| AOR | Area of Responsibility | CINC | Commander in Chief |
| ARG | Amphibious Ready Group | CIO | Chief Information Officer |
| ARNG | Army National Guard | CIP | Critical Infrastructure Protection |
| ASARS | Advanced Synthetic Aperture Radar System | CJCS | Chairman of the Joint Chiefs of Staff |
| ASCM | Antiship Cruise Missile | CLU | Command Launch Unit |
| ASD(C3I) | Assistant Secretary of Defense for Command, Control, Communications, and Intelligence | CMD | Cruise Missile Defense |
| | | CND | Computer Network Defense |
| ASEAN | Association of Southeast Asian Nations | CNO | Chief of Naval Operations |

| | | | |
|---|---|---|---|
| CONUS | Continental United States | DoDEA | DoD Education Activity |
| COS | Critical Occupational Specialist | DoE | Department of Energy |
| COTS | Commercial-off-the-shelf | DoEd | Department of Education |
| CRAF | Civil Reserve Air Fleet | DoJ | Department of Justice |
| CSS | Combat Support Service | DoS | Department of State |
| CTBT | Comprehensive Test Ban Treaty | DoT | Department of Transportation |
| CTC | Combat Training Center | DOT&E | Director, Operational Test and Evaluation |
| CTR | Cooperative Threat Reduction | DPP | Domestic Preparedness Program |
| CVBG | Carrier Battle Group | DRI | Defense Reform Initiative |
| DACOWITS | Defense Advisory Committee on Women in the Services | DRID | Defense Reform Initiative Directive |
| | | DSC | Decision Support Center |
| DAU | Defense Acquisition University | DTO | Defense Technology Objective |
| DCAA | Defense Contract Audit Agency | DWCF | Defense Working Capital Fund |
| DCAS | Defense Cash Accountability System | E-IMET | Expanded International Military Education and Training |
| DCII | Defense Finance and Accounting Service Corporate Information Infrastructure | E-Mall | Electronic-Mall |
| DCPDS | Defense Civilian Personnel Data System | EAF | Expeditionary Aerospace Force |
| DCSPER | Deputy Chief of Staff for Personnel | EDA | Excess Defense Articles |
| DDR&E | Director for Defense Research and Engineering | EDC | Economic Development Conveyance |
| | | EDI | Electronic Data Interchange |
| DeCA | Defense Commissary Agency | EDM | Electronic Document Management |
| DEOMI | Defense Equal Opportunity Management Institute | EELV | Evolved Expendable Launch Vehicle |
| | | EFT | Electronic Funds Transfer |
| DEPTEMPO | Deployment Tempo | EKV | Exoatmospheric Kill Vehicle |
| DESC | Defense Energy Support Center | ELV | Expendable Launch Vehicle |
| DFAS | Defense Finance and Accounting Service | EMD | Engineering and Manufacturing Development |
| DIBRS | Defense Incident-Based Reporting System | | |
| DIMHRS | Defense Integrated Military Human Resource System | EO | Equal Opportunity |
| | | EO/IR | Electro-Optic/Infrared |
| DISN | Defense Information System Network | EPA | Environmental Protection Agency |
| DLA | Defense Logistics Agency | eSB | Enhanced Separate Brigade |
| DLAMP | Defense Leadership and Management Program | ESH | Environment, Safety, and Health |
| | | ESI | Enterprise Software Initiative |
| DLH | Direct Labor Hour | ESPC | Energy Savings Performance Contract |
| DMC | Defense Management Council | ESSM | Evolved Sea Sparrow Missile |
| DMDC | Defense Manpower Data Center | EUSC | Effective U.S. Control |
| DMS | Defense Message System | FBI | Federal Bureau of Investigation |
| DNSC | Defense National Stockpile Center | FCR | Fire Control Radar |
| DoDDS | DoD Dependents Schools | FCS | Future Combat System |

| | | | |
|---|---|---|---|
| FEMA | Federal Emergency Management Agency | IDTC | Interdeployment Training Cycle |
| FHP | Force Health Protection | IG | Inspector General |
| FLIR | Forward-Looking Infrared | IM | Information Management |
| FMF | Foreign Military Financing | IMET | International Military Education and Training |
| FMS | Foreign Military Sales | | |
| FMTV | Family of Medium Tactical Vehicle | IMINT | Imagery Intelligence |
| FSL | Federal, State, and Local | IMM | Integrated Materiel Manager |
| FSMP | Full Service Moving Project | INS | Inertial Navigation System |
| FSS | Fast Sealift | IO | Information Operations |
| FTC | Federal Trade Commission | IOT&E | Initial Operational Test and Evaluation |
| FUE | First Unit Equipped | ISR | Intelligence, Surveillance, and Reconnaissance |
| FWE | Fighter Wing-Equivalent | IT21 | Information Technology 21st Century |
| FYDP | Future Years Defense Program | JASSM | Joint Air-to-Surface Standoff Missile |
| GAO | General Accounting Office | JDA | Joint Duty Assignment |
| GATM | Global Air Traffic Management | JDAM | Joint Direct Attack Munition |
| GCCS | Global Command and Control System | JECPO | Joint Electronic Commerce Program Office |
| GCSS | Global Combat Support System | JEFX | Joint Expeditionary Force Experiment |
| GED | General Equivalency Diploma | JITC | Joint Interoperability Test Command |
| GEIS | Global Emerging Infections System | JLENS | Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System |
| GIG | Global Information Grid | | |
| GNFP | Global Naval Force Presence | JMRR | Joint Monthly Readiness Review |
| GPRA | Government Performance and Results Act | JPME | Joint Professional Military Education |
| GPS | Global Positioning System | JRIP | Joint Reserve Intelligence Program |
| GSA | General Services Administration | JROTC | Junior Reserve Officer Training Corps |
| GSORTS | Global Status of Resources and Training System | JSF | Joint Strike Fighter |
| | | JSIMS | Joint Simulation System |
| HAE | High-Altitude Endurance | JSO | Joint Specialty Officer |
| HAF | Headquarters Air Force | JSOW | Joint Standoff Weapon |
| HHS | Department of Health and Human Services | JSTARS | Joint Surveillance Target Attack Radar System |
| HIMARS | High-Mobility Artillery System | | |
| HMMWV | High-Mobility Multipurpose Wheeled Vehicle | JTF | Joint Task Force |
| | | JTF-CND | Joint Task Force-Computer Network Defense |
| HQ AFPC | Headquarters, Air Force Personnel Command | JTF-CS | Joint Task Force for Civil Support |
| IA | Information Assurance | JTF-SWA | Joint Task Force-Southwest Asia |
| ICBM | Intercontinental Ballistic Missile | JTMP | Joint Training Master Plan |
| ICOG | International Cooperative Opportunities Group | JWCO | Joint Warfighting Capabilities Objective |
| | | KEM | Kinetic-Energy Missile |
| ID | Identification | KFOR | Kosovo Force |

| | | | |
|---|---|---|---|
| LAMPS | Light Airborne Multipurpose System | NASA | National Aeronautics and Space Administration |
| LAWS | Land Attack Warfare System | NATO | North Atlantic Treaty Organization |
| LCAC | Landing Craft Air Cushion | NAVWAR | Navigation Warfare |
| LD/HD | Low Density/High Demand | NBC | Nuclear, Biological, and/or Chemical |
| LMARS | Logistics Metrics Analysis Reporting System | NCO | Noncommissioned Officer |
| LMSR | Large Medium-Speed Roll-on/Roll-off | NES | Navy Enlisted System |
| LOSAT | Line-of-Sight Antitank | NM | Nautical Mile |
| LRIP | Low-Rate Initial Production | NMD | National Missile Defense |
| MAGTF | Marine Air-Ground Task Force | NMS | National Military Strategy |
| MARAD | Maritime Administration | NOAA | National Oceanic and Atmospheric Administration |
| MASINT | Measurement and Signature Intelligence | NOR | Net Operating Result |
| MAV | Medium Armored Vehicle | NORAD | North American Aerospace Defense Command |
| MCM | Mine Countermeasure | | |
| MCTFS | Marine Corps Total Force System | NPOESS | National Polar-Orbiting Operational Environmental Satellite System |
| MDAP | Major Defense Acquisition Program | NPR | National Partnership for Reinventing Government |
| MEADS | Medium Extended Air Defense System | | |
| MEB | Marine Expeditionary Brigade | NSA | National Security Agency |
| MEF | Marine Expeditionary Force | NSA/CSS | National Security Agency/Central Security Service |
| MEU | Marine Expeditionary Unit | | |
| MFP | Major Force Program | NSFS | Naval Surface Fire Support |
| MHPI | Military Housing Privatization Initiative | NSS | National Security Strategy |
| MHS | Military Health System | O&M | Operation and Maintenance |
| MIO | Maritime Intercept Operation | OIPT | Overarching Integrated Product Team |
| MNWG | Multinational Working Group | OMB | Office of Management and Budget |
| MPA | Maritime Patrol Aircraft | OPINS | Officer Personnel Information System |
| MPF | Maritime Prepositioning Force | OPTEMPO | Operating Tempo |
| MPF(E) | Maritime Prepositioning Force Enhancement | OSD | Office of the Secretary of Defense |
| | | OSTP | White House Office of Science and Technology Policy |
| MPF(F) | Maritime Prepositioning Force Future | | |
| MRS-05 | Mobility Requirements Study FY 2005 | PAA | Primary Authorized Aircraft |
| MSC | Military Sealift Command | PAC-3 | Patriot Advanced Capability-3 |
| MTF | Military Treatment Facility | PAI | Primary Aircraft Inventory |
| MTI | Moving Target Indicator | PC-WIPT | Paperless Contracting Working Integrated Process Team |
| MTM/D | Million Ton-Miles Per Day | PCC | Panama Canal Commission |
| MTVR | Medium Tactical Vehicle Replacement | PDD | Presidential Decision Directive |
| MWR | Morale, Welfare, and Recreation | PDS | Personnel Data System |

PERSTEMPO
    Personnel Tempo

PfP     Partnership for Peace

PKI     Public Key Infrastructure

P.L.     Public Law

PM&O     Portfolio Management and Oversight

PMAI     Primary Mission Aircraft Inventory

PME     Professional Military Education

POM     Program Objective Memorandum

PPBS     Planning, Programming, and Budgeting System

PPI     Past Performance Information

PRTV     Production Representative Test Vehicle

QDR     Quadrennial Defense Review

QoL     Quality of Life

R&D     Research and Development

RAM     Rolling Airframe Missile

RBA     Revolution in Business Affairs

RC     Reserve Components

RCCPDS     Reserve Component Common Personnel Data System

RCE 05     Reserve Component Employment-2005

RCI     Residential Communities Initiative

RDT&E     Research, Development, Test, and Evaluation

REMIS     Reliability and Maintenance Information System

RETAIN     Reenlistment, Reclassification, and Assignment System

RMA     Revolution in Military Affairs

RO/RO     Roll-on/Roll-off

ROK     Republic of Korea

RPM     Real Property Maintenance

RRE     Risk Reduction Effort

RRF     Ready Reserve Force

RSIP     Radar System Improvement Program

RSOI     Reception, Staging, Onward Movement, and Integration

RV     Reentry Vehicle

S&T     Science and Technology

SADARM     Sense and Destroy Armor Munition

SATCOM     Satellite Communications

SBIR     Small Business Innovation Research

SBIRS     Space-Based Infrared System

SDB     Small Disadvantaged Business

SEP     System Enhancement Program

SFW     Sensor-Fuzed Weapon

SIDPERS     Standard Installation/Division Personnel System

SIGINT     Signals Intelligence

SIPRNET     Secret Internet Protocol Router Network

SLAM     Standoff Land Attack Missile

SLBM     Submarine-Launched Ballistic Missile

SLEP     Service Life Extension

SM     Standard Missile

SOC     Special Operations Capable

SOF     Special Operations Forces

SORTS     Status of Resources and Training System

SPI     Single Process Initiative

SROC     Senior Readiness Oversight Council

SSBN     Ballistic-Missile Submarine

SSC     Smaller-Scale Contingency

SSF     Single Stock Fund

SSN     Attack Submarine

SSP     Stockpile Stewardship Program

START     Strategic Arms Reduction Treaty

STOVL     Short Takeoff and Vertical Landing

TADIL     Tactical Data Information Link

TAMD     Theater Air and Missile Defense

TARA     Technology Area Review and Assessment

TARS     Theater Airborne Reconnaissance System

TAV     Total Asset Visibility

TBM     Theater Ballistic Missile

TCS     Temporary Change of Station

TD-1     Taepo Dong-1

TD-2     Taepo Dong-2

TDY     Temporary Duty

TFRS     Total Force Retention System

| | | | |
|---|---|---|---|
| THAAD | Theater High Altitude Area Defense | USDA | U.S. Department of Agriculture |
| TMA | TRICARE Management Activity | USEUCOM | United States European Command |
| TMD | Theater Missile Defense | USFK | United States Forces Korea |
| TPED | Tasking, Processing, Exploitation, and Dissemination | USJFCOM | United States Joint Forces Command |
| | | USPACOM | United States Pacific Command |
| UAV | Unmanned Aerial Vehicle | USSOCOM | United States Special Operations Command |
| UFO | Ultra-High Frequency Follow-on | USSOUTHCOM | |
| URD | Uniform Resource Demonstration | | United States Southern Command |
| USAR | U.S. Army Reserve | USSPACECOM | |
| USAREUR | United States Army Europe | | United States Space Command |
| USARSA | United States Army School of the Americas | USSTRATCOM | |
| | | | United States Strategic Command |
| USCINCEUR | | USTRANSCOM | |
| | Commander in Chief of the United States European Command | | United States Transportation Command |
| | | V&V | Verification and Validation |
| USCINCJFCOM | | VAMOSC | Visibility and Management of Operating and Support Costs |
| | Commander in Chief of the United States Joint Forces Command | | |
| | | VISA | Voluntary Intermodal Sealift Agreement |
| USCINCPAC | | VTOL | Vertical-Takeoff-and-Landing |
| | Commander in Chief of the United States Pacific Command | WCMD | Wind-Corrected Munitions Dispenser |
| | | WMD | Weapons of Mass Destruction |
| USCINCSOC | | WOSB | Women-Owned Small Business |
| | Commander in Chief of the United States Special Operations Command | WRAP | Warfighter Rapid Acquisition Program |
| USCINCSTRAT | | Y2K | Year 2000 |
| | Commander in Chief of the United States Strategic Command | YATS | Youth Attitude Tracking Study |